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THE UNIVERSITY OF ALBERTA

SATISFACTION DERIVED BY USERS OF THE URBAN TRAIL SYSTEM IN EDMONTON, ALBERTA

BY

GEORGE MURPHY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS IN RECREATION AND LEISURE STUDIES

DEPARTMENT OF RECREATION AND LEISURE STUDIES

EDMONTON, ALBERTA

FALL, 1988

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9216 - 168 St.
EDMONTON, ALBERTA
CANADA T5R 2V9

Date: 13-10-88

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled SATISFACTION DERIVED BY USERS OF THE URBAN TRAIL SYSTEM IN EDMONTON, ALBERTA, submitted by GEORGE MATTHEW MURPHY. in partical fulfilment of the requirements for the degree of MASTER OF ARTS.

.....

DR. R.P. HERON

(Supervisor)

.....

DR. L.M. WANKEL

.....

DR. D.M. RICHARDS

Date: 7-10-88

ABSTRACT

The purpose of this study was to determine the amount of leisure satisfaction derived by people from their use of the urban trail system in Edmonton. The research population consisted of the total membership of eight clubs and organizations whose 1379 members were seen as likely users of the trail system.

A 61 item questionnaire was used in the collection of data. The first section of the questionnaire focused on selected background variables of the population. The second section dealt with the trail users' responses to external stimuli such as other users' activities and the physical conditions of the trails. The third section utilized a modified version of Beard and Ragheb's (1980) Leisure Satisfaction Scale to determine degrees of types of leisure satisfaction connected with doing their own particular activity on the trails. The final section of the questionnaire included some remaining background variables and an open ended response opportunity.

Data were statistically analyzed through correlation analysis, analysis of variance, t test, factor analysis, and the AHMAVAARA matching procedure. Open ended responses were subjected to content analysis.

Individuals affiliated with organizations having different specific outdoor recreation activity foci were found to differ from each other in the amount of leisure satisfaction derived from their use of the trails. Trail users who used the trails for dissimilar activities differed from each other in their feelings toward each other and their feelings toward the physical environment.

No relationship was found to exist between types of leisure satisfaction with the users' own trail activity, "characteristics of other trail users" or "physical characteristics of the trails." This gives rise to the speculation that the concepts "Satisfaction" and "Dissatisfaction" operate separately from one another as Herzberg has postulated.

People of all ages derived a generally high degree of leisure satisfaction from their use of trails. Feelings toward other people using the trails were generally positive while vehicles and animals on the trails were viewed negatively. The physical environment was generally viewed in a positive way.

Females derived more leisure satisfaction from their use of the trails than did males, but they were significantly more concerned about personal safety.

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To my children, Derryl and Joy-Anne, who were very young when this work began: Thank you for having the good sense to grow into beautiful adults. Your encouragement and sacrifice is duly noted: The cheque is in the mail!

To Nadine, my wife, my love, my friend: "To return home at eventide with gratitude; and then to sleep with a prayer for the beloved in your heart and a song of praise upon your lips." "Love one another, but make not a bond of love". For this I thank you. To allow one another the freedom to be is a special gift for us both. Your turn is next; I'll fix the house!

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Chapter I

THE RESEARCH PROBLEM

This chapter (1) introduces the study;

(2) offers a rationale for site selection;

(3) addresses the significance of the study;

(4) presents the statement of the problem and sub problems;

(5) Explains the delimitations, definitions, abbreviations and assumptions made for this study.

A number of recent studies e.g., Lucas and Stankey, 1974; Adelman, Heberlein, and Bonnicksen, 1979; Knopp and Tyger, 1973 have demonstrated the presence of conflict and confrontation in recreational use of facilities. According to Lucas (1964)

> Visitors to the Canoe Country in 1960 differed markedly in their view of the resource .... The paddlers viewed the area as a wilderness in which to travel and camp [while] the canoeists using outboard motors saw the area as a place to enjoy wilderness fishing.
> (Lucas, 1964:369)

Users of a recreational facility who differ significantly from each other in their activities often become competitors for the same space and this can lead to a decrease in user satisfaction. As Lime and Stankey put it, "More visitors competing for the same amount of recreational space will frequently mean that they interfere with each other's activities." (Lime and Stankey, 1971:179).

This study undertook to explore this situation in the context of an urban trail system to extend the information from previous studies

which have been restricted to backcountry or wilderness contexts. The urban setting reflects problems similar to those found in the backcountry such as multiple use, damage to trails through over or inappropriate use, and physical confrontation. However, its setting has the potential to have larger scale problems simply because the number and diversity of trail users is greater than in the wilderness. This greater use can potentially create more encounters between different users. As Wagar put it, management should have objectives that will "... reduce conflicts among competitive uses; reduce the destructiveness of people; increase the durability of the physical resource; and provide increased opportunities for visitor enjoyment." (Wagar, 1977:11).

Rationale for Site Selection

The survey research was conducted in Edmonton, Alberta, Canada and utilized the trails located within the Edmonton Park system which includes the North Saskatchewan River. All the parks are operated under the jurisdiction of the Edmonton Parks and Recreation Department with the exception of Strathcona Science Park which is managed by the Alberta Provincial Government.

With the development of the River Valley Parks System over the years, Edmonton's citizens have come to regard the system as a playground for their leisure activity and for transportation, either by bicycle or on foot.

In total, there are 29 kilometers of paved cycling trails and 26 kilometers of hiking trails in the Capital City Recreation Park. The

rest of the system contains 35-40 kilometers of hiking trails. In winter, both hiking and bicycle trails are used for cross-country skiing, jogging, hiking, some mountain biking, and, on some upstream trails, for horseriding. In the summertime all uses except skiing occur, although some skiing enthusiasts use rollerskis and rollerblades on the paved paths. With the large population and the numerous types of users, there is great potential for conflict with a subsequent negative effect on the amount of satisfaction of the users.

The site was selected because it offered research opportunities which would be of planning, management,and theoretical significance. Further the number of people making use of the trails is large, access to membership lists identifying many of the users was available and the use of trails in an urban setting has not been extensively studied. As well, the responsibility for the condition, location, and types of trails is that of the City of Edmonton Parks and Recreation Department whose managers were extremely interested in the results of the study.

The City's river valley managers have accepted that a "... principal objective of land management is to provide sustained benefits for people." (Wagar, 1977:11-20), and that a major objective of recreation management is "... to provide maximum satisfaction to the public within the limits of certain resource, policy, and budgetary constraints." (Lime, 1972:198).

People who recreate have been found not to be universally the same in their responses, needs, and demands. Consequently, as Dunn observed, "... the demands of various user groups need to be differentiated so that opportunities and management programs may be designed to

accommodate this diversity." (Dunn, 1983:1). One of the purposes of this study is to determine the amounts of satisfaction derived from trail use, and to relate that to user demands.

Foster and Jackson observed that "... judgements about user satisfaction and preferences have been influenced by planners and managers and their understanding of the values of the recreating public" (Foster and Jackson, 1979:293). Using managers and planners alone for judgements and subsequent actions has been deemed to be an inadequate approach. Almost all decisions which affect facilities in a major way are now done with public input as an integral part of the process. According to Becker

> Managers who strive to maintain user satisfaction as an objective are then obliged to understand the components which comprise the positive amenities and preferences for each of the available experiences in their area.
> (Becker, 1978:256).

By helping to clarify and understand the views of the users, studies such as this might aid planners and managers in determining the level of support they are likely to receive for actions proposed. As Lime and Stankey observed

> The final decision will rest with the manager[s] but [they] can greatly narrow the range of uncertainty in decision making through active dialogue with the interested public as well as the planners, engineers, academicians, and researchers.
> (Lime and Stankey, 1971:177).

Significance of the Study

The focus of this study is the amount of leisure satisfaction derived by people from their use of the trails. The literature review revealed much interest by researchers in the use of wildland and

backcountry facilities such as lakes, rivers and trails. The majority of these studies have been directly concerned with the use of the physical environment by various different users and the identification of competing uses and whether or not people were satisfied with their experience. It might be anticipated that the use of trails in an urban setting may evoke feelings and amounts of dissatisfaction with others' leisure use similar to those described by researchers such as Lucas (1964), Yonge and Scotter (1972), Knopp and Tyger (1973), McKay and Moeller (1976), Wong (1979), Jacob and Schreyer (1980), Gramman and Burdge (1981), who found that people who used the physical environment in a manner different from oneself were often seen as using that environment in ways which are incompatible with one's own use or inappropriate, or both.

The significance of this study for research is that it offers another set of data to build on the findings of previous studies. The study also provides a test of the generalizability of Beard and Ragheb's Leisure Satisfaction Scale (Beard and Ragheb, 1980:20-33).

The significance of the study for management is that the information obtained might provide direction for the day-to-day operation and the capital construction of present and future physical facilities. Since managers of the park and its trail system have noted that many and varied uses were made of the paved bicycle pathways and the dirt/gravel hiking trails, an understanding of the satisfaction derived by those users from their trail activities would be useful to those managers for planning and operating the facility.

Statement of the Problem

> Are the amounts of different types of leisure satisfaction derived from the use of a particular physical environment dependent upon the characteristics of other users and the characteristics of that physical environment?

This main problem led to the development of the first six sub problems which pertain to the six different types of Leisure Satisfaction incorporated in Beard and Ragheb's Leisure Satisfaction scale. They are stated in the form of Null Hypotheses:

Sub Problem One

There is no significant difference between different users of the trail system regarding the amount of Psychological leisure satisfaction derived from their use of the trails.

Sub Problem Two

There is no significant difference between different users of the trail system regarding the amount of Educational leisure satisfaction derived from their use of the trails.

Sub Problem Three

There is no significant difference between different users of the trail system regarding the amount of Social leisure satisfaction derived from their use of the trails.

Sub Problem Four

There is no significant difference between different users of the trail system regarding the amount of Relaxational leisure satisfaction derived from their use of the trails.

Sub Problem Five

There is no significant difference between different users of the trail system regarding the amount of Physiological leisure satisfaction derived from their use of the trails.

Sub Problem Six

There is no significant difference between different users of the trail system regarding the amount of Aesthetic leisure satisfaction derived from their use of the trail.

Two other major areas of interest are explored in this study in an attempt to further understand leisure satisfaction derived by trail users. First, how satisfied were trail users with others using the trail system in a same, similar or different manner? Second, how satisfied were trail users with the physical characteristics of the trails?

These questions led to the development of two sub problems which are also stated in the form of null hypotheses.

Sub Problem Seven

There is no relationship between the types of satisfaction reported by trail users on the "Leisure Satisfaction Scale" and those derived from the following "User Characteristics":

people walking/hiking;

people cycling;

people jogging;

people enjoying nature;

people riding horses;

people driving trail motorcycles;

people driving 4 X 4 vehicles;

people walking unleashed dogs;

people walking leashed dogs;

people orienteering;

people skiing;

Sub Problem Eight

There is no relationship between the types of satisfaction reported by trail users on the "Leisure Satisfaction Scale" and that derived from the following "Physical Characteristics":

location of the trails;

access to the trails;

change/shower facilities;

maintenance of the trails (upkeep);

access to washrooms;

safety from personal/physical confrontation;

safety of the trails in terms of my expertise level;

trail surface;

locational signs;

directional signs;

length of trails for my use;

trail system overall;

Beard and Ragheb asked "What is the relationship between age and satisfaction ..." and "Do the types of needs filled by leisure activities vary for male and female participants?" (Beard and Ragheb, 1980:31). Sub problems were developed to assist in exploring the

questions of leisure satisfaction and age, and leisure satisfaction and sex. These are also stated in the form of null hypotheses.

Sub Problem Nine

There is no significant difference between age categories with regard to the amount of Leisure Satisfaction derived from trail use.

Sub Problem Ten

There is no significant difference between males and females with regard to the amounts of each type of Leisure Satisfaction derived from trail use.

Sub Problem Eleven

There are no similarities between Beard and Ragheb's (1980) Leisure Satisfaction Scale and the modified Leisure Satisfaction Scale used in the 1986 Edmonton trail study.

Delimitations

The study was delimited in the following ways:

Only those members of organizations who had activity interests appropriate to trail use, whose names appeared on a membership list, and whose membership list was made available for this research, were sent questionnaires. Those organizations are:

Kinsmen Joggers Club	Edmonton Overlanders Orienteering
Edmonton Nordic Ski Club	Edmonton Bird Club
Whitemud Equine Centre	Federation of Alberta Naturalists
Edmonton Bicycle Commuters	Edmonton Bicycle and Touring Club

The setting has been restricted to Edmonton's river valley trail system because of ease of data collection, the potential for a variety of opportunities for activities, its extensive use by people, and its urban setting.

The study was limited to age and sex of all demographic variables available in response to the questions raised by Beard and Ragheb, quoted on page 9. The data were readily available through responses to specific questions asked within the scope of the questionnaire.

Definitions of Terms

The following operational definitions serve to provide a basis for clarity and uniformity of understanding terms which are used repeatedly throughout the study. Other terms are defined as they appear in the text of the study.

Leisure Satisfaction is that state of well being which arises from enjoying an activity, specifically one's own activity done on Edmonton's urban trail system. It is what allows users to return to their activity, in a particular space, with the trust or knowledge that their experience is likely to be as good or better than the last time. Locke's definition is useful: "Satisfaction may be defined as a pleasurable or positive emotional state resulting from the appraisal of one's ... experiences." (Locke, 1976:1300). This simple definition of Leisure Satisfaction was used for the purposes of data collection. Further conceptual development is provided in Chapter II of the study.

Conflict is seen as "... a cause of or a special class of user dissatisfaction based upon another group or individual's behaviour."

(Jacob and Schreyer, 1980:369). This arises from "The simultaneous presence of opposing or mutually exclusive activities, activities which, if they are undertaken in the same space and time as other activities, tend to interfere with each other." (Katz and Kahn, 1978:613).

Physical Characteristics are those particular items about the trails that make up the totality of the physical facility. They include the surface, the signage, the length, location, access, and the amenities offered to the user.

Characteristics of Other Users refers to the activities in which various trail users engage themselves. These are the uses to which the trails are put by different user groups and include cycling, jogging, orienteering, skiing, nature walking and horseriding. Users are assumed to take on the activity characteristic when they engage in a particular use of the trail system.

Trails are those bicycle, horse, ski, walking and hiking trails specifically designed and designated for those purposes. Conceptually, a trail is a length of clear land on which particular activities may occur.

A Group consists of individuals who come together and identify themselves as being affiliated with a particular organization for the purpose of carrying out and being a participant in, a particular outdoor recreation activity. These individuals 'identify' their affiliation by joining a particular group or club and allowing their name(s) to appear on the respective mailing/membership lists.

Hinton and Reitz identified three criteria which define a group:

I. A group must consist of two or more people.

II. The members interact with each other in such a way that the behaviour of one member influences the behaviour of the others.

III. The members perceive themselves to be a group. A group also exhibits certain characteristics not unlike those of an individual. A group shows memory for its past experience in spite of changing membership; it is capable of learning and responding as an entity; it can engage in emotional as well as rational behaviour; and it can achieve goals well beyond the capacities of single individuals (Hinton and Reitz, 1971:31-32).

Abbreviations

1. LSS is the abbreviation for Beard and Ragheb's Leisure Satisfaction Scale.
2. CCRP is the abbreviation for Capital City Recreation Park which forms part of the study site.

Assumptions

In order to assist in this exploration of leisure satisfaction, four assumptions were made. First, there is a high degree of likelihood that group affiliation, or membership in a club dedicated to a particular activity, will lead those members to do that activity. Therefore, there would be a functional relationship between membership

in an organization dedicated to a particular activity, and the fact that organization members take part in that activity.

Second, the assumption was made that club members' particular activity involvement would take place, at times, on Edmonton's urban trail system. It is acknowledged also that recreation activity could lead to group affiliation, however only already established outdoor recreation related clubs or organizations and their members were surveyed.

Third, the assumption was made that the perceived characteristics of the physical location would lead to particular amounts of 'types' of specific leisure satisfaction.

The fourth assumption speculated that the perceived characteristics of the other users of that environment would also lead to particular amounts of 'types' of leisure satisfaction.

These assumptions are developed in model form on p. 48 which shows the relationship of the individual and the group in the search for leisure satisfaction.

Chapter II

CONCEPTUAL FRAMEWORK AND REVIEW OF THE RELATED LITERATURE

In this chapter, previous research findings are reviewed in order to clarify the nature of the variables addressed in this study.

Beard and Rayheb's Leisure Satisfaction Scale is used as a methodological conceptual framework with which to explore satisfaction.

A general overview of pleasure and happiness is presented, which provides a conceptual understanding of the terms and their opposites, displeasure and unhappiness, all relative to the concept of satisfaction. Included in the discussion are research findings which suggest the nature of the relationships among the variables.

The study data were interpreted in the light of Herzberg's Hygiene-Motivator theory (Herzberg, 1959). The theory holds that satisfaction and dissatisfaction exist as separate entities and do not necessarily operate on a continuum. This theory was used as an interpretive conceptual framework with which to explore the data.

An explanation of the data in terms of Herzberg's theory in conjunction with Shelly and Adelberg's work on satisfaction (Shelly and Adelberg, 1972) is presented in Appendix E on p. 140.

Conceptual Framework

Beard and Ragheb reported the development of an instrument that measures general leisure satisfaction in six different categories: Psychological, Educational, Social, Relaxational, Physiological and Aesthetic. This 'Leisure Satisfaction Scale' (LSS) "... was based on existing theories about leisure behaviour and play and the roles they

play in people's lives" (Beard and Ragheb, 1980:30). The theories they utilized during the development of the scale included those put forward by Patrick (1916), Neumeyer et al. (1958), Brightbill (1961). Maslow (1962), Dumazedier (1974) and Neulinger (1975).

According to their report, "using factor analysis and alpha reliability yielded a scale of six components of leisure satisfaction with reliability of .96. The components and their reliabilities were: Psychological .89, Educational .90, Social .88, Relaxational .85, Physiological .92, Aesthetic .86" (Beard and Ragheb, 1980:20).

They also developed a shorter form of the LSS which contains four items on each subscale and has an alpha reliability of .93. This is the form that was used for this study. Some slight modifications were made in consultation with the authors which made the short form LSS more conducive to collecting data about trail users' specific activities. They felt that "... leisure study depends in part upon the availability of generally accepted measures of the principal traits involved, such as leisure satisfaction" (Beard and Ragheb, 1980:22); and, therefore, developed the instrument in order to learn more about the role of leisure in the satisfaction of individual needs. For Beard and Ragheb, leisure satisfaction is defined as

> The positive perception or feelings which an individual forms, elicits, or gains as a result of engaging in leisure activities and choices. It is the degree to which one is presently content with his/her general leisure experiences and situations. This positive feeling of contentment results from the satisfaction of felt or unfelt needs of the individual.
> (Beard and Ragheb, 1980:22).

They developed several categories of 'effects' on individuals who participated in leisure activities. Factor analysis was used to

develop these separate subscales of their Leisure Satisfaction Scale. An elaboration of these categories, their content, and a summary of the theoretical rationale used follows.

This elaboration of Beard and Ragheb's short form LSS gives the names they applied to each category after factor analysis, the 'short form' content of each category, and a brief summary of the theoretical rationale they presented for these basic, yet important, reasons why people engage in leisure activities.

Beard and Ragheb's six factors and their individual variables are:

Psychological: My leisure activity is interesting to me.
My leisure activity gives me self confidence.
My leisure activity gives me a sense of accomplishment.
I use many different skills and abilities in my leisure activity.

Theoretical Rationale: Freedom of choice; fulfill self-actualization needs; engage in challenging activities; utilize abilities and talents; achieve sense of accomplishment; express one's individuality; seek self expression; wish for new experiences.

Education: My leisure activity increases my knowledge about things around me.
My leisure activity provides opportunities to try new things.
My leisure activity helps me to learn about myself.

My leisure activity helps me to learn about other people.

Theoretical Rationale: Seeking educational stimulation; learn about selves and surroundings; satisfy curiosities; try new things; learn about nature, others.

Social: I have social interaction with others through my leisure activity.

My leisure activity has helped me to develop close relation-ships with others.

The people I meet in my leisure activity are friendly. I associate with people in my free time who enjoy doing my leisure activity a great deal.

Theoretical Rationale: Have social interaction and communication; meet new friends; enjoy good fellowship; need for belonging; gain attention and recognition; gain social respect and others' esteem.

Relaxation: My leisure activity helps me to relax. My leisure activity helps relieve stress My leisure activity contributes to my emotional well being.

I engage in my leisure activity simply because I like doing it.

Theoretical Rationale: Restorative; necessary recuperation from work; achieve rest, relaxation, and relief of stress.

Physiclogical: My Leisure activity is physically challenging. I do my leisure activity to develop my physical

fitness.

I do my leisure activity to restore me physically.

My leisure activity helps me to stay healthy.

Theoretical Rationale: Present a challenge; restoration of physical wellness; develop physical strength and stamina; enhance health; prevent obesity; increase energy.

Aesthetic: The areas or places where I engage in my leisure activity are fresh and clean.

The areas or places where I engage in my leisure activity are interesting.

The areas or places where I engage in my leisure activity are beautiful.

The areas or places where I engage in my leisure activity are well designed.

Theoretical Rationale: Physical environments are more desirable if beautiful and well designed.

Beard and Ragheb's Leisure Satisfaction Scale offers this study a structure within which to examine and categorize some seemingly different aspects of leisure satisfaction. The study is mainly in the realm of 'amount' of satisfaction with certain aspects of trail use.

Review of Literature

Pleasure and Happiness

Satisfaction can best be understood in relation to other terms. Satisfaction seems to be part of a process involving "pleasure" and

"happiness" which exist at different levels and for different lengths of time. In order to understand satisfaction in this light, the three principal dimensions of pleasure displeasure, satisfaction, dissatisfaction and happiness, unhappiness are addressed.

Pleasure may be seen as one step in the process which stems from what Shelly and Adelberg term "... simple positive reinforcement [which is] any internal change, behaviour, or external event which produces pleasure" (Shelly and Adelberg, 1972:9). The complexity and duration of the reinforcement process "... differentiates a simple positive reinforcement from a positive reinforcement" (Shelly and Adelberg, 1972:9). They accept Berlyne's definition for something being positively reinforcing as:

> Responses regularly followed by reinforcements will be performed more frequently than alternative responses simultaneously available and generally [positive] reinforcements increase the probability of a continuation or an immediate repetition of the same response.
> (Berlyne, 1967:11)

Pleasure seems to involve the stimulation of the pleasure centres of the brain which has been found to be effective in reinforcing behaviours. Apparent displeasure can be achieved by an accumulation of <u>simple</u> negative reinforcements which lead to negative reinforcements. The conceptualizing of 'pleasure' and 'displeasure' as results of the stimulation of basic pleasure/pain brain centres, which lead to <u>simple</u> reinforcement, permits the derivation of certain other results which can be empirically tested. As Shelly and Adelberg remarked

> Stimulation and reinforcement are elementary building blocks, a special type of 'hypothetical' construct whose major purpose is to permit the development of further ideas. In the development of these further ideas, simple positive and simple negative reinforcements will be

> combined with certain other hypothesized relationships. Such relationships will subsequently be combined in various ways to arrive at statements about behaviour which are more directly testable.
>
> (Shelly and Adelberg, 1972:12)

This concept is shown diagramatically in Figure I

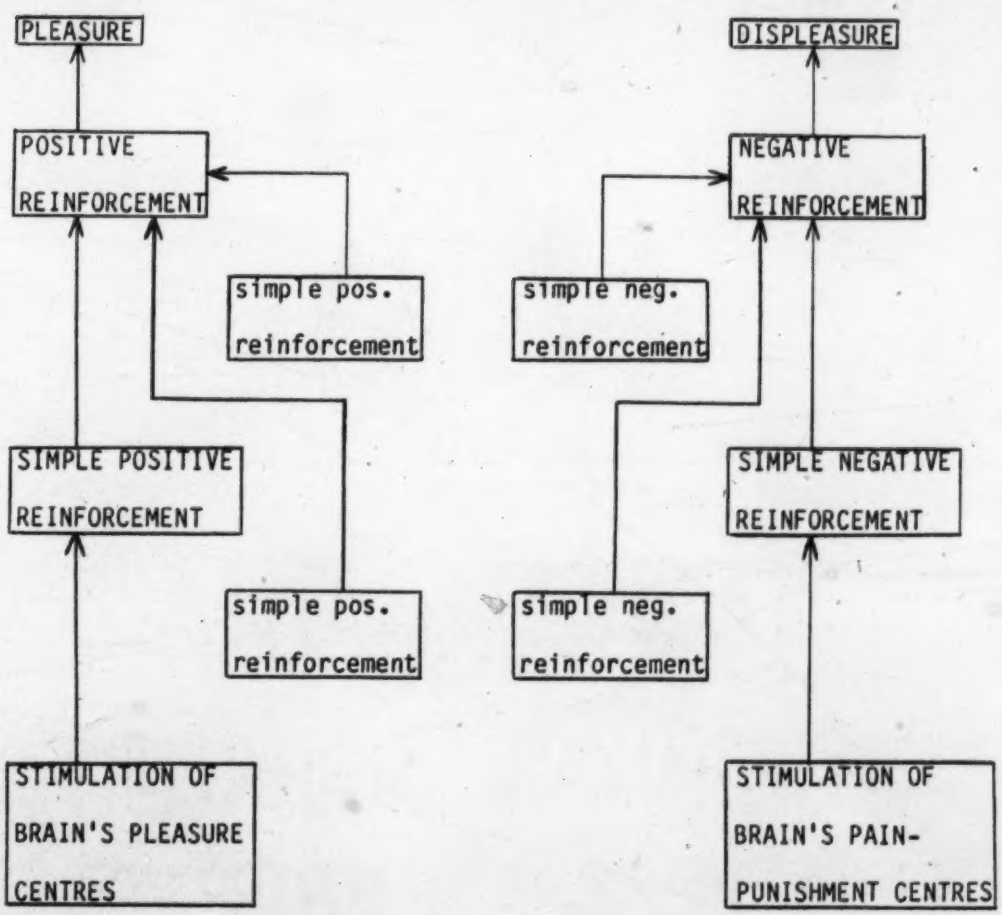

FIGURE I
ADAPTED FROM SHELLY AND ADELBERG
STIMULATION/REINFORCEMENT RELATIONSHIP

This 'approach' allowed Shelly and Adelberg to infer the existence of reinforcements from the observations of behaviours in natural settings and to extend these to the analysis of satisfaction in general. Shelly and Adelberg's main point is that happiness for an individual is reached through a series of steps or building blocks, which are actually three basic dimensions. According to them, stimulation of the brain's centres of pleasure or pain-punishment leads to simple reinforcement. Enough simple reinforcement of these centres, given sufficient duration, will lead to reinforcement. These, in turn, lead to brief moments of either pleasure or displeasure which leads to satisfaction or dissatisfaction which then leads to happiness or unhappiness for an individual. This end result is diagrammed in Figure II.

FIGURE II
ADAPTED FROM SHELLY AND ADELBERG
CAUSES OF HAPPINESS/UNHAPPINESS

If we accept these terms in the light of this progression, happiness becomes the 'end result' or the ultimate for which to strive. However, other writers substitute 'satisfaction' in the place of happiness in the hierarchy. Dumazedier, for instance, stated that "The search for a state of satisfaction is the prime condition of leisure."

(Dumazedier, 1974:75), and Bloch and Bruce made the point that "In making leisure choices, people seek certain satisfactions from an activity." (Bloch and Bruce, 1984:75). Shelly and Adelberg though, concluded that

> Happiness is a result of the balance between satisfaction and dissatisfaction. If, over an individual's recent life as a whole, one exceeds the other, then that individual will be happy or unhappy, which is a state of affairs somewhat accurately reflected by the individual's saying that he is happy or unhappy.
> (Shelly and Adelberg, 1972:14)

In the realm of work, researchers have explored satisfaction in much the same way as leisure researchers. The conclusions reached seem to express similar understanding of the psychological state of satisfaction. Expressed happiness or enjoyment with a particular set of circumstances seems to be directly related to the amount of satisfaction an individual experiences.

Locke was closer to Shelly and Adelberg with his statement "... satisfaction may be defined as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences." (Locke, 1976:1300). This pleasurable or positive emotional state, as a result of job experiences can be related to one's leisure experiences. As pleasurable/positive experiences build into individual leisure satisfaction experiences, so do the individual leisure satisfaction episodes build toward overall happiness with one's life experience.

Happiness seems to be the end result of the accumulation of many satisfactions and becomes a more or less permanent state of mind.

Understanding and reaching a state of happiness may well be akin to being able to reach a state of control over one's life. The

prepotent aspects need to be in place in order to reach either state. In the case of happiness, one must have experienced pleasure, or a series of "brief pleasurable moments" which lead to moments or incidents of satisfaction, which, in turn, lead to or contribute to overall happiness with one's state of affairs or life as a whole.

In the case of total life control, one must have the prepotent aspects of physiological needs, safety needs, belongingness and love, and esteem taken care of, more or less, in order to allow time and effort for reaching or striving for a state of self-actualization. With the help of the higher standard of living extant in North America today, "The dominant motives of members (of organizations) are the higher order ego and social motives, particularly those for personal gratification, independence, self-expression, power and self-actualization" (Katz and Kahn, 1978:398).

Leisure Satisfaction

Why is there a need to study the intangible benefits or satisfactions derived from participation in leisure time pursuits? Hawes stated "It is to move toward more understanding of the question of <u>why</u> people participate in leisure time pursuits" (Hawes, 1978:249).

The reasons people use physical environments such as the trails are likely unlimited, but the contention here is that the search for and gain of satisfaction is primary. To repeat Dumazedier, "the search for a state of satisfaction is the prime condition of leisure. When this state of satisfaction ends or deteriorates, the individual tends to discontinue the corresponding activity" (Dumazedier, 1978:74, 75).

The literature clearly points to the need for the presence of satisfaction with one's experiences in a particular leisure activity for there to be a continuation of that activity by the individual concerned. If the individual involved in a particular leisure activity, at a particular location, is dissatisfied with his/her experience, or sees him/herself as competing for resources with other users, or is unable to maximize his/her total experience, the result is likely to range from complaints to authorities to leaving the location and/or the activity to go elsewhere in hopes of gaining or regaining a measure of the satisfaction previously obtained.

> If participation in an activity is perceived to exact a cost and this cost is not compensated by added inducements, then [this] is likely to lead to decreased interaction or withdrawal from the relationship.
> (Pondy, 1967:312).

When satisfaction declines, there is a likelihood that further use of the physical environment in question will also decline unless the incentives to remain are sufficiently attractive. Motivation to remain or return likely depends on the amount of satisfaction attained from the activity while using the particular physical environment and can therefore be related to frequency of use and frequency of return visits.

Conflict

Research pertaining to the two major variables, "other user characteristics" and "physical characteristics of the trails", was found in the literature dealing with conflict and carrying capacity. This study has come about partially as a result of reported encounters

between different types of users of the urban trail system in Edmonton. Different and competing uses of the trails, either at the same time or at different times, have been perceived by some users to be incompatible. For instance, hikers have reported concerns that bicyclists ride too quickly and that the slower hikers are at risk of injury. Cross country skiers complain that horses ruin their pre-set tracks with their hooves and droppings, as well as being dangerous when met at speed on the trail. "Bicyclists complain that people walk on the paved bicycle pathways in such a way as to constitute a danger to all concerned, joggers have reported problems with bicyclists, horseriders and skiers, and all have complained about motorized dirt bikes and snowmobiles." (Edmonton Parks and Recreation Managers, Pers. Comm. 1986). Conflict has been described as

> ... the simultaneous presence of opposing or mutually exclusive activities, activities which, if they are undertaken in the same space and time as other activities, tend to interfere with each other. Two systems (persons, groups, nations) are in conflict when they interact directly in such a way that the actions of one tend to prevent or compel some outcome against the resistance of the other. (Katz and Kahn, 1978:613).

The encounters investigated in this study have to do with the degree of compatibility of a range of uses, some of which go well with each other, and others which are very different in their needs for space and their impact on others and the environment. As Gramann and Burdge have said, "When the behaviour of one group of recreationists is incompatible with the social, psychological, or physical goals of another group's goal interference will occur" (Gramann and Burdge, 1981:15). This thought has been supported to some degree in the literature by Jacob and Schreyer for instance, who stated that "Another

person's behaviour can actually alter the desired social or physical components of the recreation experience" (Jacob and Schreyer, 1980: 369). Further, Knopp and Tyger stated that "The motorized vehicle literally destroys the quiet, undisturbed, natural environment the self-propelled recreationist is often seeking" (Knopp and Tyger, 1973: 7).

For an individual, conflict can be defined as goal interference attributed to another's behaviour

> ... where conflict is viewed as a special class of user dissatisfaction where the cause of one's dis-satisfaction is identified as another group or individual's behaviour. Conflict defined thus is <u>not</u> the same as competition for scarce resources since the goal interference must be identified and personal ignorance or bad luck, such as may occur in the case of a lost permit or in finding facilities filled, play no part in the perception of conflict or the forming of an attitude toward the perpetrator of goal interference.
> (Jacob and Schreyer, 1980:370).

Expectations of one's recreation experience likely tend to change with one's perception of how high or low one expects the use to be in any particular area. The values that an individual places on his/her experiences on the trail system have a great deal to do with whether or not a conflict is perceived to exist. As Jacob and Schreyer note

> It is important to recognize that conflict as goal interference is not an objective state but must be understood as an individual's interpretation and evaluation of past and future social acts. Social contact, defined as knowledge of another's behaviour, is a necessary condition for conflict.
> (Jacob and Shreyer, 1980:369).

User attitudes seem to play a large part in determining whether or not a conflict exists. The result of encounters can range from dissatisfaction and intolerance of others, to satisfaction and

tolerance depending on the expectations and perceptions held by the users. Yonge and Scotter, in their Tonquin Valley study, found that

> Backpackers showed intense dissatisfaction upon encountering horse parties on trails. Both factions exhibited intolerance with the other. The attitude of hikers was criticized by the outfitters.
> (Yonge and Scotter, 1972:64)

Good, Good and Golden suggested that

> Attitude similarity affects perceived attractiveness in a manner analogous to the well documented effect of a person-stranger similarity on the stranger's perceived attractiveness. (Good, Good and Golden, 1973:980)

which, in effect, supports the conclusion that one is more likely to be attracted to, and supportive of, someone who is perceived to hold attitudes and opinions similar to oneself.

Others have found what appears to be a 'one-way' conflict in existence between different types of wilderness recreation users. For instance, Lucas and Stankey stated in their backcountry recreation study that conflict between mechanized and non-mechanized users "... is a one way conflict, the mechanized users do not dislike the non-mechanized users" (Lucas and Stankey, 1974:19). Adelman, Heberlein and Bonnicksen confirmed Lucas' 1964 findings in their 1979 Boundary Waters Canoe Area study by concluding that paddlers still disliked motor-boaters while motorized boaters were pleased to see paddlers, "... thus, the asymmetric antipathy between these two groups has existed for more than 15 years" (Adelman, Heberlein & Bonnicksen, 1982:59).

Some researchers suggest that the 'self-propelled' trail users, such as hikers, skiers and joggers may view themselves as being a more 'natural' activity than those who use other than self-driven power. For instance, Knopp and Tyger found that "a significant and consistent

difference [exists] between ski tourers and snowmobilers, i.e.: the ski tourers were much more likely to conform to the environmentalist image." (Knopp and Tyger, 1973:3); Lucas observed that "... paddlers viewed the area as a wilderness in which to paddle ... outboard motor [users] saw the area as a place to enjoy wilderness fishing," (Lucas, 1964:396); Gramman and Burdge suggested that differences in equipment might prove important in that "... in the competition for a particular recreation resource, users of some types of equipment may have more mobility and thus more control over space than others." (Gramman and Burdge, 1981:25).

Wong's findings supported the "self-propelled" concept as more natural in that

> cross-country skiers were more likely to consider physical exercise, being a part of nature, and achievement as important [while] snowmobilers were found to favour experiences of a social nature such as being with friends and family togetherness. Thus, if a cross-country skier preferred a natural environment, he would be displeased by the presence of a snowmobile.
> (Wong, 1979:29)

The literature seems to point toward the conclusion that trail users who are smaller, slower and less mechanized will be more likely to report dissatisfaction over encounters with those users who are larger, faster and more mechanized than will be the case with the reverse situation. Whatever the case, amount and type of satisfaction seem to be determined by the conditions of the activity one is involved in as a user. "Conflict results when users with a possessive attitude towards the resource confront users perceived as disrupting traditional uses and behaviour norms" (Jacob and Schreyer, 1980:374). This seems to be as true for non personal encounters (i.e.: horse/dog droppings,

footprints in ski tracks) as it is for face to face confrontation. The literature also suggests that the perceptions that one has about the area in which recreation takes place seem to affect the recreation experience. For instance, Becker found that

> visitors in lower use density zones were less tolerant toward sighting other individuals than visitors to higher use zones and that negative attitudes toward propriety of ORV (outdoor recreation vehicle) use increase[d] as the area density decreased.
> (Becker, 1978:252)

If one expects to recreate in a densely populated heavy use area, then the expectations of the experience seem likely to differ from those of a user looking for a pristine wilderness experience. In the former case, satisfaction would seem to depend more upon the activity and not so much the quality of the environment, while satisfaction in the latter case would likely depend upon both the activity and the quality of the environment. The quality of the environment is an essential pre-condition to satisfaction being derived from the activity. The development of conflict therefore may be largely dependent upon pre-conceived expectations of the recreation experience. This is suggestive of a functional relationship between leisure satisfaction and conflict in the sense that the more conflict one experiences, the more likely one is to be dissatisfied with engaging in a particular leisure activity at that location, under those or similar circumstances.

Social psychologists have attempted to understand how people feel and why they act in the manner they do from the point of view of "... stressing the individual as a participant in social relations."

(Iso-Ahola, 1980:19). As Iso-Ahola defines it,

> The social psychology of leisure [is] the scientific study of experiences and behaviours of individuals within the social leisure context. Its focus is on the individuals, groups or culture during his subjectively experienced leisure. (Iso-Ahola, 1980:20)

This study has operationalized pleasure as the base factor which supports satisfaction which leads to happiness. Pleasure is presented here as the underlying component of satisfaction and happiness wherein no evidence of conflict exists. This leads to the conclusion that lack of conflict can lead to pleasure and satisfaction with a situation given that 'motivator' factors or brief pleasurable moments exist. This can then lead to happiness with the existing condition of one's life. These thoughts are displayed in Figure III.

FIGURE III
RELATIONSHIP OF SATISFACTION
TO HAPPINESS AND CONFLICT

The right side of Figure III displays the relationship between confrontation and conflict which can lead to displeasure, dissatisfaction and unhappiness with a particular situation. The 'confrontation' is representative of any number of events such as another's action, deterioration of the trail surface, horse droppings, dogs running loose or lack of washroom facilities. The left side of Figure III displays the relationship between lack of conflict, pleasure, satisfaction and happiness in a way that relates Shelly and Adelberg's theory in a simple manner. Lack of conflict by itself will not necessarily lead to pleasure. However, if brief pleasurable moments are introduced into an environment which lacks conflict, then pleasure, satisfaction and happiness are likely to result.

Chapter III

METHODOLOGY

The discussion presented in this chapter is divided into six major sections:

(1) Study Site.

(2) Trail Users.

(3) Research Methodology.

(4) Treatment of the Data.

(5) Data Collection Instrument.

(6) Data Collection Procedures.

Description of the Study Site and Trail Users

Study Site

The North Saskatchewan river valley essentially divides Edmonton into the 'North' side and the 'South' side. The river is old and relatively slow and meanders through the alluvial plain on its way from the Rocky mountains to the sea. Years of erosion by its waters has resulted in a combination of high, steep banks, and flat floodplains with boreal forest and true prairie flora facing each other across its width. In many places on either side of the river there has been room to develop trails and parks while some steep banks require connector trails to run up and out of the valley through the many existing ravines. Three older river valley communities and some utility developments have also forced trail development to become part of the community or, in the case of CCRP, to cross the river by way of pedestrian bridges. This has meant using existing streets for trails

in some areas. The vast majority of the river valley property has been the subject of ongoing purchase by the City for parkland for many years until recent decisions by City Council allowed purchase for private development in some areas. Some private 'leased' property has also been allowed in years past but does not affect trail access to any great degree. In total, there are thirty-three distinct parks in the river valley, ranging from large 'City-Wide' parks such as Hawrelak and Rundle, to local or pocket parks such as Dawson and Gallagher. While many parks exist as identifiable, unique entities, there tends to be much interconnection among them. However, since (CCRP) was built and opened in 1978, the bureaucrats, and many of the citizens, have come to view the system in two distinct parts; CCRP and 'the rest of the river valley'. The Alberta Provincial Government provided money for the development of hiking trails, paved bicycle paths, pedestrian bridges, amenity centres, viewpoints, emergency telephones, cooking and picnic shelters, water fountains, washrooms and interpretive and safety signs in the Capital City Recreation Park. This park extends from near the High Level bridge (109 St. bridge) downstream to Hermitage Park while upstream, the 'rest of the river valley' extends from the 109 St. bridge to Big Island. The upstream portion of the system has no paved trails for cycling, no pedestrian bridges crossing the river, and no special maintenance budget for trail development, upkeep, or extras like winter cross-country ski track setting. Trails include those developed for skiing, hiking, jogging, cycling, horse riding and fitness as well as a myriad of undeveloped trails used by wildlife, children, nature lovers and others. In total there are 2541 hectares

of developed parkland and 100 kilometres of trails in the system.

Historically, Edmonton has had outdoors people as its residents and the river valley provided shelter, transportation, resources and recreation to its human inhabitants. There is little or no evidence of permanent habitation in the river valley before the advent of the white fur trader, but Athapaskan, Cree and Blackfoot peoples all made use of the valley. It has been suggested that, since the river was the Northern boundary of the sometimes fierce Blackfoot, that permanent residence by other tribes was too risky. (CCRP Plans, 1982, Appendix A:55). In 1803 the scarcity of firewood around "Fort Augustus" (North West Company) and "Edmonton House" (Hudson's Bay Company). near present day Fort Saskatchewan, forced a move to within present day Edmonton City limits. In 1821, the North West Company became part of the Hudson's Bay Company and Fort Edmonton was designated as the chief post of the district, supplying posts to the North and West. In 1830, after several moves and site floodings, the Fort was moved to the top of the river bank directly south of the present legislative building. The Fort remained the centre of action for many years and was the main source of protection and security for many Indian peoples as well as the traders and explorers.

In 1892, Edmonton was incorporated as a town with a population of 700 which increased gradually until the Klondike gold rush of 1897 when the Edmonton business community promoted itself as the main access route overland to the Yukon gold fields. Very few prospectors completed the journey of thousands of kilometres through essentially untracked terrain, but some survived to return to the City as settlers.

The gold rush, its publicity and the federal government's encouragement of immigration doubled Edmonton's population between 1895 and 1901. In 1899 the southside settlement was incorporated as the Town of Strathcona with a population of 1,156.

In 1900, the first bridge, the "Low Level", was completed, thus offering quicker access by pedestrian, wagon and train traffic to and from both communities. The exploitation of river valley resources was extensive. Coal seams were discovered early on and mines of various size and impact abounded. The valley was soon denuded of trees and sawmills were supplied from upriver by loggers. Clay was extracted from river terraces for brickmaking, and gravel resources became important in street construction, gold was panned and sluiced from gravel bars, and ice was cut from the river to be stored and sold. Edmonton and Strathcona were amalgamated in 1912 at the peak of a land boom. Construction, public works projects and population were at the highest point but it soon ended. Railway construction was over, the war in Europe ended immigration, the huge tract of land owned by the Hudson's Bay Company was put on the market, and the "bottom dropped out" of real estate. The City did not return to prosperity until the oil discoveries of the 1940's although World War II brought much employment in the construction and aircraft repair industries. During this period, the long term commitment to development, and the acquisition for parkland in the river valley, resulted in public parkspace which is likely unrivaled in any other river city in North America. The further development of the continuous open space system known as Capital City Recreation Park came about in 1978 with funding

provided by the Alberta Provincial Government. This park is actually contiguous with the not so well developed park system upstream from the centre of the City to the Western boundary, but lack of available funding has prevented the extension of such high cost facilities as paved paths, pedestrian bridges and amenity centres. Some further trail development and enhancement has taken place, however, using available resources such as the Parks and Recreation department and volunteers can provide, and the trail system upstream of Capital City Recreation Park is excellent for many activities.

The river valley has basically been reforested through natural means as well as comprehensive human activities and is home to a wide variety of flora and fauna. Many people who use the trails and parks do so because of its tranquil, close-to-nature setting and the official stance of city fathers over the years has been to maintain and enhance those opportunities to experience nature in the best setting possible.

Trail Users

The population for the purposes of this study was the total membership of the clubs and organizations selected for their availability and their potential and perceived use of the river valley trails. Due to the relatively small number of members in all groups (range 46-351), it was decided to send questionnaires to the total population.

The groups selected for this study were the Kinsmen Jogging Club, the Edmonton Nordic Ski Club, the Whitemud Equine Center, the Edmonton Overlanders Orienteering Club, the Edmonton Bird Club, the Federation of Alberta Naturalists (Edmonton members), the Edmonton Bicycle

Commuters and the Edmonton Bicycle and Touring Club.

The survey population consisted of those who actually completed and returned the questionnaire. Questionnaires were mailed to 1,361 club or organization members and 615 responded to the first request. A second mail out was done on November 26, 1986 and 168 of 627 questionnaires were returned within the usable time limit. A total of 113 questionnaires were returned as unusable for one reason or another: i.e. - no such address, declined to answer, respondents were too young (appeared on mailing list, but were very young children of adult members). A final total of 783 usable questionnaires were returned for a percentage return rate of 57.5.

Table I displays the demographic profile of the respondents. This profile is grouped by activity and includes the river valley parks most used by the respondents, the season, days and times of most use, age category, sex, education, and household income. Where a relatively high percentage of use exists outside of the major season reported, that has been included in the information presented. The other groups' reports very definitely leaned toward a single category. Where a relatively high percentage of use exists outside of the major season reported, that has been included in the information presented. The other groups' reports very definitely leaned toward a single category. The parks referred to in the table are listed in Appendix F which contains the river valley map.

TABLE I
DEMOGRAPHIC VARIABLES
HIGHEST PERCENTAGE
REPORTED BY GROUP

	GROUP															
	JOGGERS (202)	%	SKIERS (93)	%	HORSE RIDERS (39)	%	BICYCLE COMMUTERS (89)	%	ORIENTEERS (64)	%	BIRD WATCHERS (57)	%	NATURALISTS (72)	%	BICYCLE TOURERS (167)	%
Demographic Variables																
Trail Most Used	Kinsmen	54.9	Gold Bar	19.1	Hawrelak	58.3	Hawrelak Mill Creek	13.6	Hawrelak	21.1	Hawrelak	18.2	Hawrelak	17.5	Kinsmen	17.5
Season	DL	57.0	S&DL	42.9	S&DL	48.6	DL (S&DL	47.2 33.7)	DL	39.1	S&DL	44.9	S&DL	58.5	DL (S&DL	68.9 22.2)
Day Most Used	Monday	84.2	Sunday	91.4	Sat/Sun	84.6	Sun	80.9	Sun	79.7	Sun	71.9	Sunday	76.4	Sunday	92.8
Time Most Used	11am - 2 pm	68.3	11 am - 2 pm	23.1	2 pm 6 pm	37.8	2 pm - 6 pm	39.3	2 pm - 6 pm	37.3	2 pm - 6 pm	32.7	2 pm - 6 pm	35.4	11 am - 2 pm	23.6
Age	41-45	26.5	31-35	23.1	26-30	21.6	36-40	23.0	26-30	29.5	56-60	21.2	31-35	17.1	26-30	32.5
Sex	Male	86.6	Male	60.9	Female	79.5	Male	69.7	Male	51.6	Male	65.5	Male	59.7	Female	55.7
Household Income	Over $50K	68.5	Over $50K	25.6	Over $50K	51.5	Over $50K	34.9	Over $50K	29.5	Over $50K	34.0	Over $50K	35.2	Over $50K	26.7
Education	UG	32.2	UG	28.9	HS	36.8	UPG	34.9	UG	58.1	HS	28.1	UPG	35.7	UG	39.3

DL - Dryland S - Snow Season UG - University Graduate UPG - University Post Graduate HS - High School

Research Methodology

Much of the research into outdoor facility use has been triggered by reports of confrontation between user groups and the search for reasons for those confrontations. (Adelman, et al., 1982:45; Wong, 1979:76; Knopp and Tyger, 1973:11; McKay and Moeller, 1976: 1 & 3; Lucas, 1964: 394-411; Lucas and Stankey, 1974:14).

Statements on the social and psychological state of affairs between different groups of users follow the lines of: "Perceptions of resource use differ markedly between different user groups" (Lucas, 1964:369). "Self propelled and non-self propelled recreationists conflict" (Lucas and Stankey, 1975:19). and "When the behaviour of one group of recreationists is incompatible with the social, psychological or physical goals of another group's, goal interference will occur" (Jacob and Schreyer, 1980:369).

Many different research techniques have been adapted from other fields, particularly sociology and psychology, in order to explore the human behavioural aspects of outdoor recreation. These techniques "... range from behavioural observation, [to] experimental designs utilizing treatment and control groups, the use of secondary sources, and computer simulation of recreation movement patterns." (Dunn, 1983:66-67). However, it seems evident that the survey is the most popular and frequently used research tool for the collection of information about the users of outdoor recreation, employing either the interview or the self administered questionnaire technique.

According to Leedy

> The descriptive survey method is employed to process the data that comes to the researcher through observation ... (which is) the principal means of collecting the data, whether these are actually physically observed or 'observed' through benefit of questionnaire or poll technique. (Leedy, 1980:76,98).

This study used the self administered questionnaire to collect the data. This method allows the researcher to obtain information about the personal experience and views of the individual which may not be otherwise directly observable. Availability of manpower to directly observe behaviour is not a question, and information gathered in this fashion is readily comparable with other studies of a similar nature.

Problems and disadvantages occur as well. One of the largest is the obtrusive nature of the method in which the subjects' familiarity with the survey technique may contribute to influencing his/her response and thus introduce error into the study. Another factor is bias, which is virtually impossible to keep from a questionnaire. Some potential study subjects may be overlooked or left out on purpose, as is the case with this study. Therefore the possibility of a sampling bias exists in that the sample of subjects was not truly random throughout the total population but concentrated on readily identifiable potential trail users. Argument can be put forward, however, that those groups surveyed are a representative example of potential trail users in Edmonton. As Leedy has suggested, "Bias for the researcher, like the presence of germs for the surgeon, is next to impossible to avoid. As researchers, we must learn to live with bias, but at the same time to guard against infective destruction." (Leedy, 1980:126).

Research Technique

The survey questionnaire technique was selected as the most appropriate format for the study. This technique was judged to be the most effective way to reach the members of the groups who had supplied their membership lists and permission to contact their members. In addition, the questionnaire technique allowed for meaningful comparison of results between this study and that of Beard and Ragheb and their "Leisure Satisfaction Scale".

The questionnaire was developed with three major areas of interest in mind. First. the "Leisure Satisfaction Scale" (LSS) developed by Beard and Ragheb was chosen as a portion of the instrument with which data were gathered. The authors derived several needs of individuals which leisure activities may satisfy through an extensive search of the literature on leisure and recreation. Beard and Ragheb then developed items which were intended to assess the extent to which these 'needs' are satisfied through an individual's leisure activities. They found that

> These six subscales were moderately related (a median inter. correlation of .52) but each had sufficient reliability for establishing a separate scale, especially for research purposes where interpretation would be made of means rather than individual scores. (Beard and Ragheb, 1980:30)

Second, it was felt to be important to survey the amount of satisfaction trail users derived from other users doing the same, similar, or completely different activities. These are the "other user characteristics". Third, the condition of the physical environment used for trail activities was addressed. These are the

"Physical Characteristics of the trails." This study replicated, with modifications, the Beard and Ragheb methodology. Table IV (p. 56) presents the results of the replication and is discussed there. The Beard and Ragheb six factor solution is shown in Table II.

However, before the decision was taken to utilize the findings of Table IV, the degree of congruence with the Beard and Ragheb solution had to be established. This was undertaken through a procedure known as the AHMAVAARA match. The results are as follows and effectively address sub problem eleven.

This procedure conducts oblique transformation of one factor pattern matrix by the AHMAVAARA method to match a second pattern matrix. The procedure showed a strong match between the results of the two studies despite the distance of time and location and the difference between the study groups. Further discussion is found in Chapter IV, p. 83.

The data gathered from the variables used in the "Other Users" and "Physical Characteristics" sections of the questionnaire were factor analyzed and both resulted in a 3 factor solution. Results are presented in Tables XIII on p. 73 and XV on p. 77. The discussion of the results is presented there.

Treatment of the Data

The short form of Beard and Ragheb's Leisure Satisfaction Scale was used in five ways:

First, the LSS was modified, with the authors' permission, in order to bring the user's specific activity into play as a factor in

TABLE II

LEISURE SATISFACTION
SIX FACTOR SOLUTION
BEARD & RAGHEB
1980 STUDY

VARIABLE	COMMON-ALITIES	FACTOR I PSYCH-OLOGICAL	II EDUCA-TIONAL	III SOCIAL	IV RELAX-ATIONAL	V PHYSIO-LOGICAL	VI AESTH-ETIC
Leisure Act's Interesting	N/K	.56	.24	.19	.25	.18	.20
Give Me Self-Confidence	N/K	.60	.38	.14	.09	.19	.08
Give Sense of Accomplishment	N/K	.57	.40	.10	.09	.19	.08
Use Different Skills and Abilities	N/K	.53	.35	.15	.14	.29	.01
Increase Knowledge	N/K	.26	.68	.16	.15	.07	.19
Try New Things	N/K	.23	.57	.24	.13	.14	.12
Learn About Myself	N/K	.12	.64	.23	.18	.25	.09
Learn About Others	N/K	.05	.57	.44	.15	.20	.01
Have Social Interaction	N/K	.20	.16	.68	.16	.13	.04
Develop Rel. With Others	N/K	.23	.12	.63	.13	.14	.10
People Are Friendly	N/K	.16	.05	.60	.18	.07	.22

TABLE II (Cont'd)

VARIABLE	COMMON-ALITIES	FACTOR I PSYCH-OLOGICAL	II EDUCA-TIONAL	III SOCIAL	IV RELAX-ATIONAL	V PHYSIO-LOGICAL	VI AESTH-ETIC
I Associate With People Who Like My Activities	N/K	.19	.15	.60	.18	.19	15
Help Me Relax	N/K	.22	.17	.24	.65	.12	.23
Help Relieve Stress	N/K	.15	.24	.15	.78	.07	.15
Contribute To Emotional Well Being	N/K	.13	.27	.23	.72	.10	.08
Like Doing Leisure Acts	N/K	.13	.16	.25	.48	.13	.15
Physically Challenging	N/K	.22	.13	.16	.04	.74	.18
Develop Fitness	N/K	.19	.16	.15	.02	.87	.08
Restore Me Physically	N/K	.18	.17	.17	.09	.84	.05
Help Me Stay Healthy	N/K	.15	.16	.19	.20	.77	.17
Fresh & Clean	N/K	.17	.11	.18	.21	.20	.53
Interesting	N/K	.17	.34	.28	.12	.17	.58
Beautiful	N/K	.11	.26	.21	.10	.14	.69
Well Designed	N/K	.09	.25	.24	.09	.19	.63

Eigen Values, % of Common Variance, and % of Total Variance for the 1980 Beard & Ragheb study were unavailable.

TABLE III

AHMAVAARA MATCH BETWEEN BEARD AND RAGHEB
LEISURE SATISFACTION SCALE AND
1986 EDMONTON TRAIL STUDY

	EDMONTON TRAIL STUDY FACTORS					
BEARD & RAGHEB FACTORS	ENJOY-MENT	KNOWLEDGE	SOCIAL	RELAX-ATIONAL	WELL-BEING	AESTHETIC
Psychological	.96					
Educational		.98				
Social			.97			
Relaxational				.96		
Physiological					.95	
Aesthetic						.93

the responses. Instead of responding to the general statement "My Leisure Activities are very interesting to me", the participants were requested to respond to the modified LSS from the point of view of their major trail use and the statement became "My Leisure Activity is very interesting to me". This change was intended to force the respondent into a categorical choice in order to allow for comparisons between and among groups of trail users who reported that they used the trails for purposes that differed from other trail users. These comparisons were made within the subscales for each group and between the groups on each subscale through analysis of variance. Six sub problems were developed which addressed the amounts of types of leisure satisfaction derived by people from their use of the trails. These sub

problems were put into the form of null hypotheses. The Sheffe procedure was used which tests for statistical significance of differences between groups at the 0.10 level. According to Katz and Kahn, "A test of statistical significance with p set at .10 is more powerful than the same test with p set at .05 [in that] it is easier to reject the null hypothesis at the .10 level" (Katz and Kahn, 1978:378).

With the size of the sample for this study (N=783) it was decided that testing at the 0.10 level was appropriate. According to Leedy, using

$$SE_{\bar{x}} = \frac{s}{\sqrt{N}}$$

where $SE_{\bar{x}}$ = the standard error of the mean

s = the standard deviation of the sample

N = the number of units in the sample

is "... a method of determining the standard error of the mean which is true for both large and small samples. The sampling distribution of means is very nearly normal for N>30" (Leedy, 1980:117).

Second, responses to the LSS statements were compared to two other major components of the study; responses to statements regarding the "Physical Characteristics" (Physical environment) of the trails and statements regarding the characteristics of the "Other Users" of the trails. Pearson correlation coefficients were developed to explore relationships between the Leisure Satisfaction reported by the trail users and the 'satisfaction' with other users and the physical characteristics of the trails.

This approach arose from the model presented in Figure IV p. 48. This model (see Chapter I, pp. 12 and 13) develops the four assumptions. Briefly, the model suggests that affiliation with a group dedicated to involvement in a particular outdoor recreation activity would lead an individual to do that activity. In the case of the Edmonton based groups, the members were assumed to do their activity, at times, on Edmonton's urban trail system. It was then hypothesized that the users' perceived characteristics of the physical environment and the perceived characteristics of those others using the trails would lead to particular levels of types of Leisure Satisfaction. This, in turn, would contribute to overall Leisure Satisfaction.

Third, the LSS data were used to determine if differences existed in amounts of Leisure Satisfaction between older and younger respondents. Analysis of variance was performed on these data.

The respondents were requested to "Please state your age" and this was assumed to be the age that the respondent had reached upon the occasion of their last birthday. The responses were then grouped into sixteen five-year categories having an age range from 1 to 76.

Due to the nature of the response, these categories were then collapsed into nine categories in order to ensure enough data in each one. The above categories remained the same except the lower age groups became "25 and under" and the last four categories became "60+".

Fourth, the LSS data were used to assess any degrees of difference in satisfaction between male and female respondents. A "T" test was used to assist in the analysis of these data.

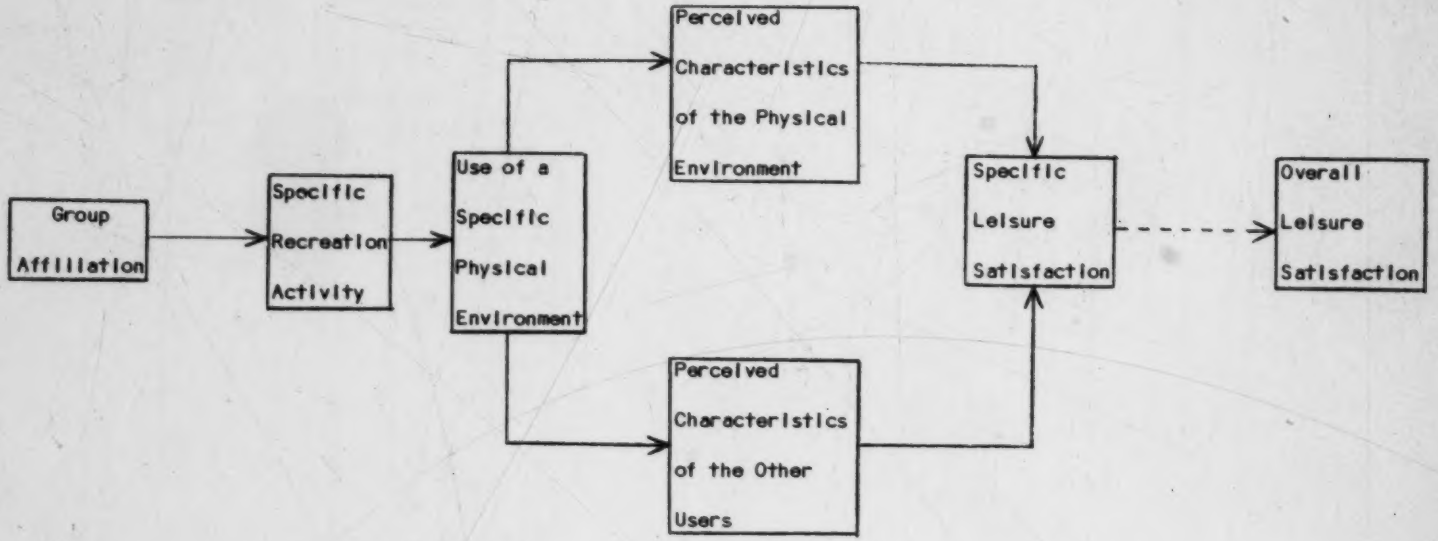
Group Affiliation
Specific Recreation Activity
Use of a Specific Physical Environment
Perceived Characteristics of the Physical Environment
Perceived Characteristics of the Other Users
Specific Leisure Satisfaction
Overall Leisure Satisfaction

FIGURE IV

MODEL OF THE INFLUENCE OF GROUP AFFILIATION

ON INDIVIDUAL LEISURE SATISFACTION

Fifth, the factors which formed Beard and Ragheb's LSS were matched with the factors which formed this study's Leisure Satisfaction Scale. An AHMAVAARA matching procedure was used in order to help determine the generalizability of the Beard and Ragheb instrument.

The eleven sub problems that developed from these methods of data treatment were treated as Null Hypotheses and a level of significance of $P<.05$ was used for the sub problems which were treated using Pearson correlation coefficients. The Sheffe procedure, utilizing a 0.10 probability level, was used, after the analysis of variance procedures, which determined differences between groups of trail users.

The Data Collection Instrument

The Self Administered Questionnaire: Development

The self administered questionnaire was designed to obtain information related to the six objectives detailed in Chapter I. Initial discussions about the broad content of the survey were held with knowledgeable individuals in planning, management and marketing, resulting in a draft questionnaire incorporating conventional design principles (Babbie, 1973; Leedy, 1980). The draft questionnaire was reviewed by planning and marketing staff, revised accordingly, and pre-tested for comprehension, clarity and length of time to complete by a group of twenty-two persons who are involved in urban trail use. As a result of comments made in the pre-test, several revisions were made in order to clarify instructions and make the questions clearer.

The final questionnaire was reproduced in a booklet format. It contained nine pages of questions as well as general instructions for

their completion. The booklet also contained a river valley parks map as a centrefold for referral by the respondents. The time for completion of the questionnaire was in the range of ten to twenty minutes. The questionnaire was accompanied by a covering letter which was devised using general principles suggested by Babbie, 1973; and Leedy, 1980. It introduced the study, the purposes of the study, the researcher and the fact that the study was sponsored by Edmonton Parks and Recreation and endorsed by the executives of the clubs and organizations to which the respondents belonged. A stamped, pre-addressed envelope was also included with a request for the return of the questionnaire by mail. A copy of the questionnaire and the covering letter are reproduced in Appendix A.

The Self Administered Questionnaire: Content

The questionnaire was used to obtain the following types of information:

(i) Profile (socio-demographic) data: age, sex, education, income, club affiliation;

(ii) Park (trail) use characteristics;

(iii) Participation in activities on the trails;

(iv) Times of use;

(v) Personal satisfaction upon meeting others;

(vi) Personal satisfaction with the physical environment;

(vii) General amount of types of satisfaction with their specific trail activity.

Socio-demographic data were requested in order to develop profiles of the survey population for each group. The first request for

information was found on the inside front cover and asked the respondent to indicate their club/organization affiliation, if any. The last section of the questionnaire requested information about age, sex, income and education. The first section of the questionnaire was designed to obtain information about whether or not the respondents used the trails, in which parks they used the trails, for which activity(ies) they used the trails, and what season(s), day(s) and times of day they used the trails. Respondents were requested to list the three parks where they used the trails most, in order of frequency of use. They were directed to the centrefold map for use in identification of park names and locations. They were then asked to list their most frequent or major activity as well as the second most frequent activity. This was done in order to set the stage for the following sections of the questionnaire which requested the participants to provide responses from the point of view of their major trail activity. Questions eight and nine addressed the questions of satisfaction with other users as well as satisfaction with the trails through a series of statements with which the respondents could agree or disagree according to the strength of their belief. The format was a five point modified Likert type scale which ranged from "Strongly Disagree" to "Strongly Agree" with a fifth category labeled "Neither Agree nor Disagree". In each case, the respondents were requested to indicate their major trail use and to reply to the statements from the point of view of that major trail use.

The items selected to represent "Other User Characteristics" reflected the types of uses made of the trails as reported through

complaints and comments made to parks managers and through consensus opinion of those park managers; e.g.: "People Enjoying Nature," "People Riding Horses." The items that were selected to represent "Physical Characteristics" of the trails reflected the existence or the lack of certain conditions which were also derived from comments and complaints as well as consensus opinion, e.g.: "Access to Trails," "Access to Washrooms."

A modified version of the Beard and Ragheb's short form Leisure Satisfaction Scale was used as question number ten.

Question number eleven was included to help determine how many users felt obliged to stop using the trails because of something or someone with which or whom they were not satisfied. This was a two-part question which asked if they had ever stopped use and then offered room for open-ended comment. Question number twelve asked: "Why do you use the river valley trails," and was left open-ended. Question number seventeen, the last one, was offered as an opportunity for the respondents to add any further comments and was also open-ended. The open-ended responses to these three questions were categorized into logical categories by the researcher after all data was collected.

Administrative Details and Data Collection Procedures

In this section, the procedures involved in the administration of the data collection are outlined. Discussed here are administrative and staff use details, sample selection, distribution and collection of the questionnaires and the general treatment of the data.

The questionnaire was developed and printed with the assistance of the Edmonton Parks and Recreation department and was mailed to the members of the clubs and organizations chosen for the study through the department's mail room. Each membership list was computerized and mailing labels were prepared and affixed to the large envelope which contained the covering letter, the questionnaire and the self-addressed pre-stamped envelope. Assistance to compile the package, apply the labels and seal the envelopes was supplied by four facility attendants at the "River Valley Outdoor Centre" in Edmonton. Each questionnaire was coded with reference to each identifiable group (from the mailing lists) and each questionnaire was dated and placed in the appropriate group upon return. The first batch of questionnaires was sent out between September 29 and October 3, 1986.

As the questionnaires returned, they were perused and categories were assigned to the open ended answers in questions eleven, twelve and seventeen, as well as to questions two (which trails) and eight (major use).

Chapter IV

FINDINGS & DISCUSSION

This chapter presents the findings which pertain to the main problem:

> Is the amount of different types of leisure satisfaction derived from the use of a particular physical environment dependent upon the characteristics of other users and the characteristics of that physical environment?

A total of 783 responses were received from the 1,361 people surveyed for a response rate of 57.5%. Of these, 722 (92.2%) stated they used the trails and filled out the questionnaire while 61 (7.8%) stated they did not use the trails but completed the questions dealing with age, sex, income, education and why they did not use the trails. Some of the "non-users" also gave answers to other parts of the questionnaire, hence an N of more than 722 in some cases.

In this chapter, findings related to the amount of satisfaction derived by Edmonton's urban trail users are presented. This is accomplished by examining the responses on the three major indicators employed in the study: leisure satisfaction, measured by the use of factors generated through the use of the Beard and Ragheb Leisure Satisfaction Scale; amount of satisfaction with other users of the trails; and amount of satisfaction with the physical environment in which trail activity took place. The data for the last two variables were generated from responses to the questionnaire sections discussed in Chapter III.

Factor Analysis of 1986 Data

The 1986 data gathered by the modified short form of Beard and Ragheb's Leisure Satisfaction Scale were subjected to factor analysis and a six factor solution was determined. The results of this analysis are presented in Table IV.

Sub Problems

Eleven sub problems were developed in the form of null hypotheses. Sub problems one through six dealt with the Beard and Ragheb Leisure Satisfaction Scale factors. Sub problems seven and eight addressed the other users of the trails and the physical aspects of the trails respectively. Sub problem nine attempted to determine the existence, if any, of differences in leisure satisfaction derived by people in different age group categories while sub problem ten dealt with differences in leisure satisfaction derived by males and females. Sub problem eleven addressed the generalizability of the Beard and Ragheb LSS.

As Table IV displays, the Beard and Ragheb variables for the Psychological factor did not remain on that factor when applied to the 1986 data. "I use many different skills and abilities ..." combined strongly with their Educational factor variables to become a part of the new factor labeled Knowledge. The variable "... gives me a sense of accomplishment" combined with their variables in the 1980 Physiological factor to become part of the 1986 Well Being factor while "... gives me self confidence" loaded strongly on three factors; .43 on factor I, Enjoyment, .46 on factor II, Knowledge and .47 on factor V,

TABLE IV

LEISURE SATISFACTION
SIX FACTOR SOLUTION
1986 TRAIL STUDY

VARIABLE	COMMON-ALITIES	FACTOR I ENJOY-MENT	II KNOW-LEDGE	III SOCIAL	IV RELAX-ATIONAL	V WELL BEING	VI AESTH-ETIC
Leisure Act Interesting	.71	.78	.13	.17	.21	.04	.06
Like Doing Leisure Act.	.54	.58	.12	.10	.39	.03	.11
Use Different Skills and Abilities	.62	.36	.67	.13	.00	.11	.03
Increase Knowledge	.65	.20	.73	.11	.15	-.13	.08
Try New Things	.69	.01	.79	.22	.04	.03	.04
Learn About Myself	.71	-.06	.74	.19	.20	.24	.06
Learn About Others	.70	-.04	.62	.53	.07	.15	.02
Social Interaction	.74	.01	.29	.79	.05	.12	.03
Dev. Close Relations	.72	.01	.29	.78	.01	.09	.05
People Are Friendly	.56	.23	-.07	.61	.14	.10	.28
I Assoc. With People Who Like My Activity	.59	.19	.17	.72	.09	.02	.01
Helps Me Relax	.77	.19	.09	.11	.82	-.10	.11

TABLE IV (Cont'd)

VARIABLE	COMMON-ALITIES	FACTOR I ENJOY-MENT	II KNOW-LEDGE	III SOCIAL	IV RELAX-ATIONAL	V WELL BEING	VI AESTH-ETIC
Helps Relieve Stress	.84	.10	.11	.06	.86	.20	.16
Emotional Well Being	.77	.17	.14	.07	.79	.19	.22
Sense of Accomp-lishment	.66	.39	.38	.06	.02	.58	.12
Physically Challenging	.68	.15	.07	.14	.06	.78	.10
Develop Phys. Fitness	.82	.05	.01	.06	.03	.89	.07
Restores Me Physically	.69	-.12	.05	.05	.14	.79	.10
Helps Me Stay Healthy	.67	.03	.02	.09	.27	.74	.16
Area Fresh and Clean	.58	-.01	-.05	.03	.13	.16	.73
Area Inter-esting	.72	.23	.19	.08	.20	.03	.76
Area Beautiful	.73	.08	.09	.09	.13	.04	.82
Area Well Designed	.62	.20	.03	.06	.02	.20	.75
Leisure Act. Gives Self Confidence	.66	.43	.46	.02	.08	.47	.15
Eigen Values		7.19	2.85	2.29	1.69	1.41	1.02
% Common Variance*		30.0%	11.9%	9.6%	7.1%	5.9%	4.3%
% Total Variance		43.9%	17.4%	14.0%	10.4%	8.6%	6.3%

Total Common Variance = .8%

Well Being. However, since it did not load at >.5, it was arbitrarily left out of factor calculations. The final variable, "My leisure activity is very interesting to me" loaded at .78 in combination with the variable "I engage in my leisure activity simply because I like doing it", which loaded at .58. This variable had originally been in the Beard and Ragheb factor Relaxational, but now became part of the new factor labeled Enjoyment. The wording of the first six sub problems then changed to reflect the name change dictated by the variable clusters.

Sub Problem One

"There is no significant difference between different users of the trail system regarding the amount of Enjoyment leisure satisfaction derived from their use of the trails".

The results of a one way analysis of variance of mean scores for Enjoyment Leisure Satisfaction derived by trail users, classified and grouped by their trail activity, are presented in Table V.

The F ratio of 4.44, significant at the $p<0.10$ level indicates that at least three differences among the means were statistically significant. The Scheffe procedure revealed that the mean score for Joggers (4.28) was significantly lower than the mean score for Horseriders (4.77), and the mean score for Bicycle Tourers (4.52). The fact that Joggers gain less enjoyment from their activity may be reflecting the fact that they do their activity for another reason. Fitness, not enjoyment, may be the end result they are seeking.

Table V

ANALYSIS OF VARIANCE BY GROUP FOR THE LEISURE SATISFACTION FACTOR "ENJOYMENT"

	TYPE OF LEISURE SATISFACTION			
		ENJOYMENT		
GROUP		$\bar{x}$	S.D	RANGE OF RESPONSES
1.	Kinsmen Joggers	4.28[b]	.75	1.5 - 5
2.	Edmonton Nordic Ski Club	4.46	.63	2.5 - 5
3.	Whitemud Equine Centre	4.77[a]	.45	3.0 - 5
4.	Edmonton Bicycle Commuters	4.55	.60	1.5 - 5
5.	Edmonton Overlanders Orienteering Club	4.47	.70	1.5 - 5
6.	Edmonton Bird Club	4.62	.56	3.0 - 5
7.	Federation of Alberta Naturalists	4.56	.54	2.5 - 5
8.	Edmonton Bicycle & Touring Club	4.52	.58	2.0 - 5
$\bar{X}$		4.47		
N		737		

a = high mean
b = low mean

Source	D.F.	Sum of Squares	Mean Squares	F. Ratio	F Prob	Signif. Different Groups at 0.10 Level
Between	7	12.5539	1.7934	4.44	.001	1-3, 1-8
Within	729	294.2317	0.4036			
TOTAL	736	306.7856				

Horseriders, on the other hand, express great enjoyment with their activity as do Bicycle Tourers, Birdwatchers, Naturalists, and Bicycle Commuters.

Sub Problem Two

"There is no significant difference between different users of the trail system regarding the amount of Knowledge leisure satisfaction derived from their use of the trail".

The results of a one way analysis of variance of mean scores for Knowledge Leisure Satisfaction derived by individuals, classified and grouped by their trail activity, are presented in Table VI.

The F ratio of 8.01, significant at the 0.10 level indicates that at least seven differences among the means were statistically significant. The Scheffe procedure revealed that the mean score for Horseriders (4.05) was significantly higher than the mean scores for Joggers (3.14), Naturalists (3.39), and Bicycle Commuters (3.47). As well, the Scheffe procedure revealed that the mean score for Joggers was significantly lower than the mean scores for Orienteers (3.62), Skiers (3.54), and Bicycle Tourers (3.54).

Once again the Joggers report a low amount of Knowledge Leisure Satisfaction with their activity. This could be a function of the nature of the activity itself and not necessarily with the need to know how to do the activity, what to wear, where to do the activity, or what the best equipment might be. Horseriders, on the other hand, derive great satisfaction from learning and using new knowledge.

TABLE VI

ANALYSIS OF VARIANCE BY GROUP FOR THE LEISURE SATISFACTION FACTOR "KNOWLEDGE"

TYPE OF LEISURE SATISFACTION

KNOWLEDGE

GROUP	$\bar{x}$	S.D	RANGE OF RESPONSES
1. Kinsmen Joggers	3.14[b]	.77	1.0 - 5
2. Edmonton Nordic Ski Club	3.54	.81	1.0 - 5
3. Whitemud Equine Centre	4.05[a]	.74	2.8 - 5
4. Edmonton Bicycle Commuters	3.47	.89	1.0 - 5
5. Edmonton Overlanders Orienteering Club	3.62	.94	1.0 - 5
6. Edmonton Bird Club	3.52	.74	2.2 - 5
7. Federation of Alberta Naturalists	3.39	.75	2.0 - 5
8. Edmonton Bicycle & Touring Club	3.54	.74	1.8 - 5
$\bar{X}$	3.45		
N	732		

a = high mean
b = low mean

Source	D.F.	Sum of Squares	Mean Squares	F. Ratio	F Prob	Signif. Different Groups at 0.10 Level
Between	7	35.4062	5.0580	8.01	.0000	1-2, 1-3 1-5, 1-8 3-4, 3-7 3-8
Within	724	457.1219	0.6314			
TOTAL	731	492.5280				

This satisfaction with knowledge might include a better understanding of the facilities, the other people (users) and perhaps the opportunity to increase one's understanding of one's own activity. This could take the form of such things as further development of skill level, use of new and better equipment, taking advantage of new advances in technology, finding new and better places to do the activity, or finding ways and places to increase the challenge, decrease the stress, meet new people, or come to grips with one's own personality.

Sub Problem Three

"There is no significant difference between different users of the trail system regarding the amount of Social leisure satisfaction derived from their use of the trails".

The results of a one way analysis of variance of mean scores for Social Leisure Satisfaction derived by individuals, classified and grouped by their trail activity, are presented in Table VII.

The F ratio of 2.46, significant at the $P<0.10$ level, indicates that at least one difference among the means was statistically significant. The Scheffe procedure revealed that the mean score for Horseriders (3.82) was significantly higher than the mean score for Naturalists (3.24)

In many ways, to be a Naturalist means quiet, solitude, and silent observation of the world around oneself. This seems to be reflected in the mean level of Social Leisure Satisfaction reported by this group. The Horseriders, however, generally all ride from the same centre and

TABLE VII

ANALYSIS OF VARIANCE BY GROUP FOR THE LEISURE SATISFACTION FACTOR "SOCIAL"

GROUP	TYPE OF LEISURE SATISFACTION: SOCIAL $\bar{x}$	S.D	RANGE OF RESPONSES
1. Kinsmen Joggers	3.45	.79	1.00 - 5
2. Edmonton Nordic Ski Club	3.57	.83	1.50 - 5
3. Whitemud Equine Centre	3.82[a]	.99	1.50 - 5
4. Edmonton Bicycle Commuters	3.53	.76	2.00 - 5
5. Edmonton Overlanders Orienteering Club	3.52	.85	1.50 - 5
6. Edmonton Bird Club	3.46	.65	2.50 - 5
7. Federation of Alberta Naturalists	3.24[b]	.84	1.75 - 5
8. Edmonton Bicycle & Touring Club	3.61	.75	1.25 - 5
$\bar{X}$	3.52		
N	730		

a = high mean
b = low mean

Source	D.F.	Sum of Squares	Mean Squares	F. Ratio	F Prob	Signif. Different Groups at 0.10 Level
Between	7	10.8700	1.5529	2.46	.017	3-7
Within	722	455.7231	0.6312			
TOTAL	729	466.5931				

often do so in groups on trail rides. Opportunities for greater socializing may be a factor in their relatively high degree of reported satisfaction here.

Sub Problem Four

"There is no significant difference between different users of the trail system regarding the amount of Relaxational leisure satisfaction derived from their use of the trails".

The results of a one way analysis of variance of mean scores for Relaxational Leisure Satisfaction derived by trail users, classified and grouped by their trail activity, are presented in Table VIII.

The F ratio of 1.73, significant at the $P<0.10$ level indicated that no statistical difference was found among the means. Horseriders reported the highest mean score of Relaxational Leisure Satisfaction (4.68) while Orienteers reported the least (4.28).

While all the mean scores were relatively high, the lower mean score of the Orienteers may be reflecting the competitive nature of the sport in which high levels of energy can be expended under both mental and physical pressure.

The overall mean score (4.49) was the highest reported for all the factors.

Sub Problem Five

"There is no significant difference between different users of the trail system regarding the amount of Well Being leisure satisfaction derived from their use of the trails".

TABLE VIII

ANALYSIS OF VARIANCE BY GROUP FOR THE LEISURE SATISFACTION FACTOR "RELAXATIONAL"

TYPE OF LEISURE SATISFACTION

RELAXATIONAL

GROUP	$\bar{x}$	S.D	RANGE OF RESPONSES
1. Kinsmen Joggers	4.50	.63	2.00 - 5
2. Edmonton Nordic Ski Club	4.51	.58	2.67 - 5
3. Whitemud Equine Centre	4.68[a]	.61	3.00 - 5
4. Edmonton Bicycle Commuters	4.53	.56	3.00 - 5
5. Edmonton Overlanders Orienteering Club	4.28[b]	.76	2.33 - 5
6. Edmonton Bird Club	4.54	.61	3.00 - 5
7. Federation of Alberta Naturalists	4.41	.58	3.00 - 5
8. Edmonton Bicycle & Touring Club	4.49	.55	3.00 - 5
$\bar{X}$	4.49		
N	727		

a = high mean
b = low mean

Source	D.F.	Sum of Squares	Mean Squares	F. Ratio	F Prob	Signif. Different Groups at 0.10 Level
Between	7	4.4161	0.6309	1.73	.09	None
Within	719	262.5599	0.3652			
TOTAL	726	266.9760				

The results of a one way analysis of variance of mean scores for Well Being Leisure Satisfaction derived by trail users, classified and grouped by their trail activity, are presented in Table IX.

The F ratio of 7.44, significant at the $P<0.10$ level, indicated that at least eleven differences found among the means were statistically significant. The Scheffe procedure revealed that the mean score for Joggers (4.47) was significantly higher than the mean scores for Naturalists (3.71), Birdwatchers (3.74), and Bicycle Commuters. The mean score for Skiers (4.45) was significantly higher than the mean scores for Naturalists, Birdwatchers, and Bicycle Commuters (4.00). The mean score for Orienteers (4.32) was significantly higher than the mean scores for Naturalists and Birdwatchers, while the mean score for Bicycle Tourers (4.35) was significantly higher than the mean scores for Naturalists, Birdwatchers, and Bicycle Commuters.

The responses to the four variables which comprise the Well Being factor combine the eight groups into two distinct categories, 'More Physically Active' and 'Less Physically Active'. While all the groups engage in physical activity, it is apparent that some engage in their activity for the physical attributes and benefits on a more consistent basis than others. The two categories and the percentage of agreement with four of the variable statements are shown in Table X on page 68. The two response categories "often true" and "almost always true" are combined. The variables referred to in this table are:

1. My leisure activity is physically challenging. (Chall.)
2. I do my leisure activity to develop my physical fitness. (Fit.)

TABLE IX

ANALYSIS OF VARIANCE BY GROUP FOR THE LEISURE SATISFACTION FACTOR "WELL BEING"

TYPE OF LEISURE SATISFACTION

WELL BEING

GROUP	$\bar{x}$	S.D	RANGE OF RESPONSES
1. Kinsmen Joggers	4.47[a]	.52	3.0 - 5
2. Edmonton Nordic Ski Club	4.45	.57	2.6 - 5
3. Whitemud Equine Centre	4.08	.67	2.8 - 5
4. Edmonton Bicycle Commuters	4.00	.79	2.2 - 5
5. Edmonton Overlanders Orienteering Club	4.32	.65	2.4 - 5
6. Edmonton Bird Club	3.74	.91	2.0 - 5
7. Federation of Alberta Naturalists	3.71[b]	.89	2.0 - 5
8. Edmonton Bicycle & Touring Club	4.35	.64	1.4 - 5
$\bar{X}$	4.24		
N	733		

a = high mean
b = low mean

Source	D.F.	Sum of Squares	Mean Squares	F. Ratio	F Prob	Signif. Different Groups at 0.10 Level
Between	7	52.0787	7.4398	16.46	.0000	1-7, 1-6, 1-4 2-7, 2-6, 2-4 5-7, 5-6, 8-7 8-6, 8-4
Within	725	327.7492	0.4521			
TOTAL	732	379.8279				

Table X

POLARIZATION OF GROUPS
ON FOUR OF THE WELL BEING FACTOR VARIABLES
BY PERCENTAGE

More Physically Active (%)				Less Physically Active (%)			
Chall.	Fit.	Restore.	Healthy	Chall.	Fit.	Restore.	Healthy
J. 92.4	91.8	82.0	95.7	N. 52.4	43.8	43.8	72.3
S. 87.8	91.1	85.2	93.4	B. 50.0	42.9	45.8	75.5
O. 79.7	74.6	71.4	91.2	C. 70.4	65.4	59.0	84.0
T. 84.7	85.3	79.6	93.8	H. 73.0	59.5	54.1	86.5

J = Joggers
S = Skiers
O = Orienteers
T = Bicycle Tourers

N = Naturalists
B = Birdwatchers
C = Bicycle Commuters
H = Horseriders

3. I do my leisure activity to restore me physically. (Restore.)

4. My leisure activity helps me to stay healthy. (Healthy)

The additional variable "... gives me a sense of accomplishment" was responded to positively by all groups but horseriders increased their response percentage more than any other group when compared with the other four variables. Table XI below reflects this fact.

Table XI

RELATIONSHIP OF GROUPS ON THE
WELL BEING FACTOR VARIABLE
"... GIVES ME SENSE OF ACCOMPLISHMENT"
BY PERCENTAGE

More Physically Active	Accomp. (%)	Less Physically Active	Accomp. (%)
Joggers	89.7	Naturalists	71.9
Skiers	92.2	Birdwatchers	79.2
Orienteers	90.0	Commuters	81.3
Bic. Tourers	87.8	Horseriders	91.7

It seems obvious that jogging, skiing, orienteering and bicycle touring are done, in part, for physical health reasons, therefore high levels of agreement with the variable statements could be expected. That the "... sense of accomplishment" variable loaded onto the Well Being factor also makes sense if, in fact, participants in leisure activities look for and receive rewards in physical, mental and emotional ways. It is with this variable that all the Less Physically Active groups, but particularly Horseriders, align themselves with the More Physically Active groups.

It also seems natural to expect Birdwatchers and Naturalists to respond less favourably to the physically challenging, restoration, and fitness statements. These activities are inherently more passive in terms of the comparison of the perceived end results of these activities and those such as jogging or skiing which have a definite fitness aspect built into the activity.

While Bicycle Commuters generally responded more positively to the statements than others in the Less Physically Active category, they were still a good deal less in agreement than the groups in the More Physically Active category. This suggests that physical activity may not be the highest priority for the Bicycle Commuters and that their alternative method of transportation may be the most important source of leisure satisfaction to them.

Sub Problem Six

"There is no significant difference between different users of the trail system regarding the amount of Aesthetic leisure satisfaction derived from their use of the trails".

The results of a one way analysis of variance of mean scores for Aesthetic Leisure Satisfaction derived by trail users, classified and grouped by their trail activity, are presented in Table XII

The F ratio of 2.42, significant at the $P<0.10$ level, indicates that no difference among the means was statistically significant.

Horseriders reported the highest mean score (4.16) of Leisure Satisfaction on this factor while Bicycle Commuters reported the lowest mean score (3.81). The overall mean score across all groups was 3.99.

The majority of respondents appear to be relatively satisfied with the environment in which they do their activity. The lower mean score reported by the Bicycle Commuters may have more to do with their concern over the lack of access to the Western portion of the River Valley. At the time of data collection there was no paved pathway in that area.

The respondents expressed a fairly high degree of Aesthetic leisure satisfaction with their use of the trails. Answers to the question "Why do you use the river valley trails?" dealt with the 'beauty', the 'silence', the 'country-like atmosphere', being 'close to nature', the trails being 'well maintained', and the participants 'pride in the amount and location' of the trails.

On the other hand, responses to the question "If you have ever stopped using a trail, please answer Why?" included 'too muddy', 'too icy', 'litter', 'vandalism', 'ghetto blasters', 'no bridges to cross creek anymore', 'trail surface', and 'personal safety'. Also, the major flood which Edmonton experienced in the summer of 1986 got much mention as a reason for stopping use but the cleaning, repair, and

TABLE XII

ANALYSIS OF VARIANCE BY GROUP FOR THE LEISURE SATISFACTION FACTOR "AESTHETIC"

TYPE OF LEISURE SATISFACTION: AESTHETIC			
GROUP	$\bar{x}$	S.D.	RANGE OF RESPONSES
1. Kinsmen Joggers	4.07	.61	2.50 - 5
2. Edmonton Nordic Ski Club	3.97	.67	2.75 - 5
3. Whitemud Equine Centre	4.16[a]	.68	2.75 - 5
4. Edmonton Bicycle Commuters	3.81[b]	.62	2.50 - 5
5. Edmonton Overlanders Orienteering Club	4.08	.67	2.75 - 5
6. Edmonton Bird Club	4.04	.55	3.00 - 5
7. Federation of Alberta Naturalists	3.98	.55	2.75 - 5
8. Edmonton Bicycle & Touring Club	3.91	.60	2.50 - 5
$\bar{X}$	3.99		
N	729		

a = high mean
b = low mean

Source	D.F.	Sum of Squares	Mean Squares	F. Ratio	F Prob	Signif. Different Groups at 0.10 Level
Between	7	6.4590	0.9227	2.42	.02	NONE
Within	721	274.5972	0.3809			
TOTAL	728	281.0562				

response by Edmonton Parks and Recreation crews received a positive response.

The most notable fact that was expressed by respondents on this factor and its associate question about reasons for stopping use, is that hardly any indication was given that anyone had stopped using the trail system permanently because of any particular reason.

Sub Problem Seven

"There is no relationship between the amount of satisfaction reported by trail users on the 'Leisure Satisfaction Scale' and that reported with the "Other User Characteristics".

The eleven variables dealing with people and their uses of the trails were subjected to factor analysis and a rotated varimax orthogonal three factor solution was determined. These factors and their component variables are described in Chapter III.

In order to maintain consistency with the treatment of the LSS data, no variable loading <.5 was considered. In fact, however, all original characteristics of other trail users loaded >.5. The factor variables and their loadings appear in Table XIII.

The variables clustered into what might be termed "Legitimate and Acceptable" activities, "Not Legitimate and Not Acceptable" activities and "Legitimate but Not Well Accepted" activities. Two variables had the potential to fit into other categories, depending upon where the activity took place. For instance, cycling is seen as legitimate and acceptable on the paved pathways, but not so on the unpaved trails, and walking unleashed dogs is seen as a legitimate and acceptable use of

TABLE XIII

SATISFACTION WITH CHARACTERISTICS
OF OTHER USERS
THREE FACTOR SOLUTION
1986 TRAIL STUDY
EDMONTON

	FACTORS OF OTHER USER CHARACTERISTICS			
VARIABLE	COMMON-ALITIES	Factor I SATISFACTION WITH PEOPLE	Factor II SATISFACTION WITH VEHICLES	Factor III SATISFACTION WITH ANIMALS
People Walking/ Hiking	.75	.82	-.08	.25
People Cycling	.35	.51	.29	-.02
People Jogging	.69	.82	-.06	.12
People Orient-eering	.71	.79	-.06	.05
People Skiing	.47	.67	.11	-.12
People Enjoying Nature	.71	.80	-.14	.22
People Riding Motorcycles	.83	.01	.90	.10
People Driving 4 x 4's	.83	-.06	.90	.09
People Riding Horses	.45	.09	.10	.66
People Walking Unleashed Dogs	.58	-.03	.08	.76
People Walking Leashed Dogs	.62	.16	.00	.77
Eigen Values		3.56	1.95	1.40
% Common Variance*		32.40	17.80	12.70%
Total Variance		52%	28%	20%

* Total Common Variance = 62.9%

certain parks in the river valley. After factor analysis, the factor names became:

Satisfaction With People (Legitimate and Acceptable)

Satisfaction With Vehicles (Not Legitimate and Unacceptable)

Satisfaction With Animals (Legitimate but Not Well Accepted)

Pearson correlation coefficients were developed for potential relationships between these three activity factors and the six Leisure Satisfaction Scale factors. The probability (p) of a relationship was found at the .001, .01 and .05 levels between some factors but the correlation coefficients were generally quite low with the highest being .14 between "Satisfaction with People" and "Aesthetic". A negative correlation of -.12 was found to be significant at the .001 level between "Well Being" and "Satisfaction with Animals". These data are displayed in Table XIV.

Given the low level of correlation coefficients, it is difficult to state that a real relationship exists between factors of the LSS and the characteristics of other users.

A review of the results of the correlation between individual variables of the LSS and the other user characteristics factors revealed no useful levels of correlation coefficients. The large number of respondents (N=657-706) renders the results statistically significant. There is an intriguing directional influence shown in some cases (i.e.: "Satisfaction with Vehicles" correlates negatively with the Enjoyment. Social, Relaxational and Aesthetic Leisure Satisfaction factors and "Satisfaction with Animals" showed the strongest correlation, .39, with Relaxational), but they have no real

Table XIV

CORRELATION BETWEEN TYPES OF LEISURE SATISFACTION AND FACTORS OF "OTHER USER CHARACTERISTICS"

TYPE OF LEISURE SATISFACTION		OTHER USER CHARACTERISTICS: FACTORS SATISFACTION WITH PEOPLE	SATISFACTION WITH VEHICLES	SATISFACTION WITH ANIMALS
Enjoyment	COEFF	.04	-.06	.07
	N	(723)	(715)	(715)
	P	.269	.091	.051
Knowledge	COEFF	.10	.03	.09
	N	(719)	(704)	(710)
	P	.005**	.462	.016*
Social	COEFF	.09	-.05	.03
	N	(718)	(702)	(708)
	P	.011*	.232	.401
Relaxational	COEFF	.02	-.05	.39
	N	(714)	(698)	(704)
	P	.673	.216	.297
Well-Being	COEFF	.08	.00	-.12
	N	(721)	(705)	(711)
	P	.037*	.952	.001***
Aesthetic	COEFF	.14	-.04	.10
	N	(717)	(701)	(707)
	P	.000***	.236	.007**

* Significant at .05 level
** Significant at .01 level
*** Significant at .001 level

predictive value. Further discussion of this finding appears in Chapter V within the discussion of the findings in relation to the literature.

Sub Problem Eight

"There is no relationship between the amount of satisfaction reported by trail users on the 'Leisure Satisfaction Scale' and that reported with the 'physical characteristics' of the trails."

The twelve variables dealing with the physical characteristics of the trails were also subjected to factor analysis, and a rotated varimax orthogonal three factor solution was found here as well. These factors and their component variables are described in Chapter III. Table XV shows the factor names with the variables and their loadings.

As with previous data, no loading <.5 was accepted. This left two variables out of further calculations. The variables "Safety in terms of my own expertise" and "Maintenance of the Trails" were not considered as part of a factor.

The grouping of the variables was such that the factor names became Satisfaction with: Convenience; Management; and Comfort.

Pearson correlation coefficients were then developed for the relationships between these factors and the factors of the Leisure Satisfaction Scale. These data are displayed in Table XVI.

Significant relationships were found at the .05, .01, and .001 level but, as with the people characteristics, the correlation coefficients were low. The highest found is a negative correlation of -.66 between Knowledge and Satisfaction with comfort. This may be a

TABLE XV

SATISFACTION WITH PHYSICAL CHARACTERISTICS OF THE TRAILS: THREE FACTOR SOLUTION (1986 TRAIL STUDY) EDMONTON

		FACTORS OF OTHER USER CHARACTERISTICS		
VARIABLE	COMMON-ALITIES	Factor I SATISFACTION WITH PEOPLE	Factor II SATISFACTION WITH VEHICLES	Factor III SATISFACTION WITH ANIMALS
Location of Trails	.72	.84	-.02	.09
Access to Trails	.61	.75	.18	.12
Length of Trails	.45	.64	.19	.03
Trail System Overall	.57	.67	.25	.22
Trail Surface	.44	.27	.54	.29
Locational Signs	.79	.13	.88	.07
Directional Signs	.81	.15	.89	.06
Change/Shower Facilities	.51	.14	-.01	.69
Access to Washrooms	.54	.04	.19	.71
Safety from Phys/Pers. Confr.	.42	.07	.07	.64
Eigen Values		4.11	1.35	1.25
% Common Variance*		34.3%	11.2%	10.4%
% Total Variance		61.4%	20.0%	18.6%

* Total Common Variance = 55.9%

Table XVI

CORRELATION BETWEEN TYPES OF LEISURE SATISFACTION AND FACTORS OF "PHYSICAL CHARACTERISTICS" OF THE TRAILS

TYPE OF LEISURE SATISFACTION	PHYSICAL CHARACTERISTICS OF THE TRAILS: FACTORS	SATISFACTION WITH CONVENIENCE	SATISFACTION WITH MANAGEMENT	SATISFACTION WITH COMFORT
Enjoyment	COEFF	.01	.09	.06
	N	(724)	(721)	(716)
	P	.744	.015*	.100
Knowledge	COEFF	-.04	.07	-.66
	N	(719)	(716)	(714)
	P	.280	.065	.078
Social	COEFF	.11	.06	.00
	N	(718)	(715)	(713)
	P	.003**	.111	.959
Relaxational	COEFF	.09	.05	.21
	N	(714)	(711)	(712)
	P	.014*	.199	.000***
Well Being	COEFF	.15	.04	.04
	N	(721)	(718)	(709)
	P	.000***	.013*	.346
Aesthetic	COEFF	.26	.24	-.02
	N	(717)	(714)	(719)
	P	.000***	.000***	.674

* Significant at .05 level
** Significant at .01 level
*** Significant at .001 level

result of the users' "knowing" that there are insufficient facilities but this is purely speculation. The rest of the correlation coefficients were too low to have predictive value. Significance is believed to be mainly a function of the high response (N - 664-713). There seems to be little or no relationship between these factors and Leisure Satisfaction.

Sub Problem Nine

"There is no significant difference between age categories with regard to the amounts of Leisure Satisfaction derived from their use of the trails."

The results of a one way analysis of variance of mean scores derived by trail users, classified and grouped by age category, are presented in Table XVII.

An F ratio of 4.17, significant at the $P<0.10$ level, indicates that at least one difference among the means was statistically significant for the Leisure Satisfaction factor Knowledge. The age category 26-30 years reported the highest mean score (3.62) while the age category 41-45 years reported the lowest mean score (3.21)

An F ratio of 3.96 significant at the $P<0.10$ level, indicated that at least three differences among the means were statistically significant for the factor Aesthetic. The age category 60 + years reported the highest mean score (4.36) while the age category 41-45 years reported a mean score of 3.92 and the age category 31-35 years reported the lowest mean score (3.82).

Also, the F ratio of 2.56, significant at the level $p<0.10$, indicated a difference among the means for the factor Enjoyment, but

Table XVII

ANALYSIS OF VARIANCE: AMOUNT OF TYPES OF LEISURE SATISFACTION BY AGE CATEGORY

	TYPE OF LEISURE SATISFACTION																			
	ENJOYMENT			KNOWLEDGE			SOCIAL			RELAXATIONAL			WELL BEING			AESTHETIC			$\bar{X}$	N
AGE	$\bar{x}$	SD	RGE	$\bar{x}$	SD	RGE	$\bar{x}$	SD	RGE	$\bar{x}$	SD	RGE	$\bar{x}$	SD	RGE	$\bar{x}$	SD	RGE		
25 & under (1)	4.53	.54	3-5	3.65	.70	2.2-5	3.51	.78	2-5	4.51	.55	3.33-5	4.27	.66	2.4-5	3.97	.66	2.75-5	4.07	73
26-30 (2)	4.51	.61	1.5-5	3.62	.85	1.4-5	3.53	.89	1.5-5	4.52	.58	2.33-5	4.33	.65	2.4-5	3.98	.63	2.7305	4.08	118-119
31-35 (3)	4.35	.67	2-5	3.50	.75	1.2-5	3.5	.74	1.25-5	4.36	.63	3-5	4.19	.74	1.4-5	3.82	.59	2.5-5	3.95	121-123
36-40 (4)	4.46	.64	2.5-5	3.38	.79	1-5	3.54	.76	1.5-5	4.52	.63	2.67	4.26	.72	2-5	4.01	.63	2.5-5	4.03	130-134
41-45 (5)	4.43	.74	1.5-5	3.21	.82	1-5	3.47	.84	1-5	4.46	.64	2-5	4.29	.67	2.4-5	3.92	.60	2.75	3.96	95-96
46-50 (6)	4.28	.76	1.5-5	3.25	.89	1-5	3.51	.84	1.25-5	4.43	.63	2.67-5	4.16	.66	2.5-5	4.04	.61	2.5-5	3.95	58-60
51-55 (7)	4.62	.54	3-5	3.55	.79	1.4-5	3.56	.81	1.5-5	4.58	.54	3-5	4.35	.67	2.4-5	3.98	.54	3-5	4.11	50
55-60 (8)	4.67	.57	2.5-5	3.07	.84	1-5	3.17	.72	1.75-5	4.63	.62	3-5	3.88	.99	2.2-5	4.26	.60	3-5	3.95	33
60+ (9)	4.67	.57	3-5	3.57	.84	2.2-5	3.65	.76	2.25-5	4.53	.62	3-5	4.15	.94	2-5	4.36	.60	3.25-5	4.16	37-39

Table XVII continued

	TYPE OF LEISURE SATISFACTION						
	ENJOYMENT	KNOWLEDGE	SOCIAL	RELAXATIONAL	WELL BEING	AESTHETIC	$\bar{X}$
$\bar{X}$	4.47	3.44	3.51	4.49	4.24	3.99	4.02
N	727	722	720	716	723	719	
Significantly Different Groups at 0.100 Level	**	2-5	None	None	None	3-8, 3-9, 5-9	
F Ratio	2.5619	4.1713	0.9762	1.2178	1.7744	3.9559	
F Prob.	0.0093	0.0001	0.4533	0.2855	0.0788	0.0001	
Sum of Squares:							
Between	8.4537	21.5214	5.0083	3.5902	7.3386	11.9392	
Within	296.1604	459.8292	455.9610	260.5384	369.1188	267.8522	
Total	304.6142	481.3507	460.9693	264.1286	376.4574	279.7914	
Mean Squares:							
Between	1.0567	2.6902	0.6260	0.4488	0.9173	1.4924	
Within	0.4125	0.6449	0.6413	0.3685	0.5170	0.3773	

** F. Prob. is significant but Scheffe Procedure cannot determine the location of the difference.

the Scheffe procedure was unable to determine the location of the difference(s). Since number of responses from some age categories varied, their total N reflects a range from minimum to maximum. Very little difference between age categories was found on the Leisure Satisfaction Scale. Only on two factors were any differences found and an examination of the mean amount of Leisure Satisfaction reported shows the age categories to be quite similar in their responses. The difference between the two categories "26-30" (mean score 3.62) and "41-45" (mean score 3.21) on the Knowledge factor perhaps is an indication of the "newness" of the situation for the younger age group. The mean amount of Knowledge Leisure Satisfaction reported did decline generally as the respondents became older but no definite pattern is apparent. A somewhat more apparent pattern is evident on the Aesthetic factor with the younger age categories generally reporting less satisfaction than the older categories.

Sub Problem Ten

Since there are only two variables, a T test was performed on the data. Significant differences between males and females found on four of the factors Enjoyment, Knowledge, Relaxational, and Social. Females reported the greatest total Leisure Satisfaction, as well as reporting the greatest satisfaction within each category of Leisure Satisfaction. The highest total of males responding to the survey was 487 while the highest number of females was 296. Of these, 461 males and 276 females responded to the LSS statements. Six respondents failed to indicate their sex. The results of the T test are reported in Table XVIII.

Overall, females appear more satisfied than males with their leisure activity done on the urban trail system in Edmonton. There is a significant difference in their reported leisure satisfaction on four of the six LSS factors. Only on the factors Well Being and Aesthetic is no significant difference found. Looking at the variables that make up the Well Being factor, "My leisure activity gives me a sense of accomplishment" is seen to differ at the level $p<0.05$ between the means. If we return to Table X and XI and compare those data with the demographic data in Table III, we find that a majority of Horseriders (79.5%) and Bicycle Tourers (55.7%) are female. As noted earlier in this chapter, "... sense of accomplishment" is the variable that aligns the less physically active groups with the more physically active groups on the factor Well Being. It is speculated that the high percentage of respondents who are female influences the loading of these variables. There is found to be a definite significant difference between the male and female users of the trail system for the amount of satisfaction derived from their use of Edmonton trails. The null hypothesis can therefore be rejected.

Sub Problem Eleven

"There are no similarities between Beard and Ragheb's 1980 Leisure Satisfaction Scale and the modified Leisure Satisfaction Scale used in the 1986 Edmonton trail study."

The two sets of data were subjected to an AHMAVAARA matching procedure which revealed a strong match between the results of the two studies. The results of the procedure appear in Table III on page 45.

Table XVIII

ANALYSIS OF VARIANCE
AMOUNT OF TYPE OF
LEISURE SATISFAC-
TION BY SEX

	TYPE OF LEISURE SATISFACTION																		
	ENJOYMENT			KNOWLEDGE			SOCIAL			RELAXATIONAL			WELL BEING			AESTHETIC			$\bar{X}$
SEX	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	
Male	4.40	.69	461	3.33	.80	457	3.44	.80	455	4.43	.63	453	4.23	.75	458	3.95	.61	456	3.96
Female	4.59	.59	276	3.65	.79	275	3.63	.79	275	4.58	.55	273	4.27	.66	275	4.04	.63	273	4.13
T Value	-3.98			-5.09			-3.16			-3.35			-0.72			-1.85			
P	0.000***			0.000***			0.002**			0.001***			0.469			0.065			

** Significantly different at .01 level.
*** Significantly different at .001 level.

This procedure conducts oblique transformation of one factor pattern matrix by the AHMAVAARA method to match a second pattern matrix.

The strength of the AHMAVAARA factor match and the way in which the modified variables loaded through factor analysis, support the stability of Beard and Ragheb's factors and the generalizability of their scale. The results have shown that the scale has both reliability and external validity and remains valuable and useful when used in a specific way.

Four of the six Leisure Satisfaction factors had groups which differed significantly from each other at the $P<0.10$ level. Two factors, Relaxational and Aesthetic had no groups which differed significantly. The following table XIX displays these findings.

TABLE XIX

FINAL DETERMINATION OF STATUS OF NULL HYPOTHESES ONE - SIX

Leisure Satisfaction Factors	F Ratio	Significantly Different Groups?	Reject Null Hypothesis
Enjoyment	4.44	Yes	Yes
Knowledge	8.01	Yes	Yes
Social	2.46	Yes	Yes
Relaxational	1.73	No	No
Well Being	16.46	Yes	Yes
Aesthetic	2.42	No	No

Summary

Respondents who were Horseriders expressed the greatest amount of Leisure Satisfaction across all factors but one, Well Being, while Naturalists expressed the least overall amount of Leisure Satisfaction across all factors in total and reported the lowest degree of Leisure Satisfaction on the Social and the Well Being factors. Joggers reported the highest degree of Leisure satisfaction on the Well Being factor while reporting the least amount of Leisure Satisfaction with Enjoyment and Knowledge. Orienteers reported the lowest amount of Leisure Satisfaction with Relaxational while Aesthetic Leisure Satisfaction derived from their use of the trails was lowest for Bicycle Commuters.

Differences between groups were found on four of the six Leisure Satisfaction factors. Two sets of groups differed on the Enjoyment factor, seven sets of groups differed on the Knowledge factor, two groups differed from each other on the Social factor, and eleven sets of groups differed on the Well Being factor.

No statistically different groups were found on the Relaxational or the Aesthetic factors.

The sections of the questionnaire dealing with "Other Users" and "Physical Characteristics" of the trails were treated in the same manner as the LSS scale and three factor rotated varimax orthoganal solutions were found for each. Pearson correlation coefficients were determined for the relationships between the factors of these categories and the factors of the LSS.

The Null Hypotheses: Seven and Eight.

These two sub problems were developed to explore a perceived relationship between Leisure Satisfaction factors as applied to trail users' specific activities, and general satisfaction with 'Other Users' of the trails, and the 'Physical Environment' of the trails themselves. It was initially postulated that expressed satisfaction with a particular aspect of trail use would be reflected in other aspects of trail use. For instance, greater degrees of satisfaction with the Other Users and the Physical conditions of the trails should be associated with greater expressions of Leisure Satisfaction with one's activity.

However, while statistically significant relationships have been shown to exist, the correlation coefficients are too low to have predictive value. This suggests that there may be little or no functional relationship between these characteristics and Leisure Satisfaction.

Sub problem nine addressed the question of differences in Leisure Satisfaction between age categories derived from their use of the urban trail system. Significant differences were found on two factors. The younger age categories reported greater satisfaction on Knowledge while the older age categories reported greater satisfaction on Aesthetic. A difference was indicated among the means for the factor Enjoyment but the Sheffe procedure could not determine the location.

Sub problem ten addressed the question of differences in Leisure Satisfaction between males and females derived from their use of the urban trail system. Four of the LSS factors showed differences on a T

test. Only Well Being and Aesthetic showed no differences between males and females. Females expressed more satisfaction than males on every factor.

Sub problem eleven was developed in order to explore the generalizability of Beard and Ragheb's short form Leisure Satisfaction scale. An AHMAVAARA matching procedure was used which indicated a strong match between their 1980 data and those from this 1986 study.

Chapter V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

This final chapter is divided into five major sections:

(1) an overview of the study;

(2) a summary of the findings;

(3) a discussion of the findings in relation to the literature and the study context;

(4) conclusions;

(5) a discussion of the implications of the study for practice and future research.

Overview of the Study

Purpose and Objectives of the Study

The purpose of the study was to evaluate the amounts of Leisure Satisfaction derived by people from their use of the urban trail system in Edmonton. To fulfill the study purpose, it was necessary to satisfy the following objectives:

1. To determine and compare amounts of Leisure Satisfaction derived by trail users from their use of the trails in Edmonton.
2. To determine the relationship between amount of satisfaction derived from "Other Users" of the trails and Leisure Satisfaction.
3. To determine the relationship between amount of satisfaction derived from "Physical characteristics" of the trails and Leisure Satisfaction.
4. To determine Leisure Satisfaction differences between age groups.

5. To determine Leisure Satisfaction differences between males and females.
6. To investigate the generalizability of Beard and Ragheb's LSS.

Justification for the Study

Little research has been done on the use of trails in an urban setting and no studies were found which used user satisfaction as a focus. Studies regarding backcountry use, conflict, and satisfaction have shown that trail users see themselves to be in conflict for the same resources.

Preconceived ideas of one's likely experience in a particular location were also shown to have an effect on the participants' degree of satisfaction in that, if one expected to recreate in a crowded area, one's amount of derived satisfaction would be affected less than if a wilderness experience was expected and crowded conditions encountered. This study used a large, urban, multiple use trail system which is generally known to be heavily used for many different activities and found that users generally accept that multiple use is a factor to be expected. However, those who are seen to be not using the trails in a 'responsible' manner are heavily criticized. This criticism is directed at "illegitimate" users as might be expected, but "legitimate" users come under fire as well. Cyclists are criticized for their use of trails where they are not allowed, as well as for their speed on the paved pathways, while Horseriders draw concerned comment from many users just for using the trails even though that use has been formally approved.

The study used Beard and Ragheb's Leisure Satisfaction Scale as

the measurement instrument with which to gather and examine the data. Thus, this study builds on previous research and contributes information that was not previously available in the literature. Furthermore, the study provides information to managers of urban park systems which should offer them a chance to broaden their repertoire for managing trails for users.

Methodological Framework

Beard and Ragheb's Leisure Satisfaction Scale served as the methodological framework for the study. The development of the scale was based upon existing theories of leisure behaviour. A total scale of 59 items was subjected to two pilot studies and tests of reliability and validity were performed. Beard and Ragheb utilized factor analysis and alpha reliability which yielded a scale of six components of leisure satisfaction. Their short form of the LSS, which contains 24 items, was used in this study.

Interpretive Framework

Herzberg's "Hygiene-Motivator" theory served as the conceptual framework for the study. According to this theory, satisfaction and dissatisfaction are two different dimensions and aspects that produce satisfaction are different from those that produce dissatisfaction. The theory holds that dissatisfaction can be produced by such things as interpersonal relationships, management practices and physical conditions, and are labeled the 'hygiene' factors. Satisfaction and motivation are produced by meeting the need for recognition, achievement, responsibility and personal growth, and are

labeled the 'motivator' factors. This concept is developed more fully in Appendix E.

Using five of the six Beard and Ragheb factors as 'Motivators' and the sixth, Aesthetic, with "Other Users" characteristics and "Physical Characteristics" of the trails as 'Hygiene' features, the study explored the relationship between Leisure Satisfaction factors, pertaining to the user's particular activity, and 'satisfaction' with "interpersonal relationships", "management practices", and "physical conditions".

Respondents

The respondents in the study were members of eight clubs or organizations in the City of Edmonton who were considered to be likely users of the urban trail system by virtue of their membership. Each club executive agreed to allow the use of their membership list for this study after the purpose, design, time requirements and benefits were explained to them by the researcher.

Research Methodology

A self administered questionnaire was used to collect the data. The questionnaire was mailed to 1,361 club members who represented Joggers, Cyclists, Horseriders, Cross Country Skiers, Orienteers, Birdwatchers and Naturalists. The questionnaire was accompanied by an introductory letter and a stamped return envelope. Two mailings were carried out which brought a total of 733 usable responses.

A modified form of Beard and Ragheb's Leisure Satisfaction Scale was used to obtain information about how satisfied people were with

their own leisure activity done on the urban trail system. Two other major questions were used to explore users' satisfaction with other users and with the physical conditions of the trails. Data analysis techniques reflected the descriptive and exploratory nature of the study. Descriptive statistical techniques such as means, standard deviations and frequencies, and exploratory techniques such as correlational analysis, analysis of variance and factor analysis were employed for the analysis of quantitative data. The major objective of these analyses was to gain a more fully grounded understanding of:

(1) Leisure Satisfaction derived from one's own use of the urban trails;

(2) 'satisfaction' derived from other users and physical conditions of the trails;

(3) the nature of the relationship between the preceding satisfaction categories;

(4) the location and nature of differences in Leisure Satisfaction derived by different age groups and by males and females with their use of the trails.

Summary of the Findings

The six major objectives of the study were achieved through research directed at an examination of one major problem which contained eleven sub problems. The problem statement was derived from the conceptual framework and the review of the literature. The problem is restated below followed by a restatement of each sub problem with a summary of the major related findings. Table XX on page 99 is then

presented which displays the status of each sub problem, each of which was stated in the form of a Null Hypothesis.

The Research Problem

> Is the amount of different types of leisure satisfaction derived from the use of a particular physical environment dependent upon the characteristics of other users and the characteristics of that physical environment?

Sub Problem One

"There is no significant difference between different types of users of the trail system regarding the amount of Enjoyment satisfaction derived from their use of the trails."

Joggers differed significantly at the $p<0.10$ level with a lower mean score than Horseriders and Bicycle Tourers on this factor. The factor itself is made up of two variable statements, "My leisure activity is very interesting to me", and "I engage in my leisure activity simply because I like doing it". The former was part of the 1980 Beard and Ragheb Psychological factor while the latter was part of the 1980 Relaxational factor. Horseriders expressed the greatest amount of enjoyment with their activity while Joggers expressed the least. All groups expressed a high degree of Enjoyment leisure satisfaction.

Sub Problem Two

"There is no significant difference between different users of the trail system regarding the amount of Knowledge leisure satisfaction derived from their use of the trails".

The four variable statements from the Beard and Ragheb Educational

factor combined with one variable statement from their Psychological factor to make up this factor. Seven differences among the means were found to be significant at the $p<0.10$ level. Again, the Horseriders expressed the greatest amount of Knowledge leisure satisfaction while the Joggers expressed the least.

Sub Problem Three

"There is no significant difference between different users of the trail system regarding the amount of Social leisure satisfaction derived from their use of the trails".

The variable statements comprising this factor in the current study were the same as those for the 1980 Beard and Ragheb study. One difference between the means was found to be statistically significant at the $p<0.10$ level. Horseriders reported significantly greater Social leisure satisfaction than did Naturalists. Those respondents from groups which are perceived to be more solitary in nature such as Joggers, Birdwatchers, and the Naturalists, reported lower amounts of Social leisure satisfaction than did other groups.

Sub Problem Four

"There is no significant difference between different users of the trail system regarding the amount of Relaxational leisure satisfaction derived from their use of the trails".

Three of the four original variable statements make up this study's Relaxational factor. The fourth, as has been mentioned above, is one of the variables that makes up the Enjoyment factor. No statistically significant differences were found among the means of the

groups. All groups reported a high degree of Relaxational leisure satisfaction.

Sub Problem Five

"There is no significant difference between different users of the trail system regarding the amount of Well Being leisure satisfaction derived from their use of the trails".

The four Physiological variable statements from the 1980 study combined with one of the 1980 Psychological variable statements to make up this factor. At least eleven differences among the means were found to be statistically significant at the $p<0.10$ level. Here, the Joggers expressed the highest degree of leisure satisfaction while Naturalists expressed the lowest.

Sub Problem Six

"There is no significant difference between different users of the trail system regarding the amount of Aesthetic leisure satisfaction derived from their use of the trails.

The same four variable statements which made up this factor in the 1980 study comprised the factor in this study.

No differences were found to be statistically significant among the means. Horseriders again reported a greater mean score of Leisure Satisfaction than other groups on this factor while Bicycle Commuters expressed the least.

Sub Problem Seven

"There is no relationship between the amount of satisfaction reported by trail users on the 'Leisure Satisfaction Scale' and that

reported with the "Other Users Characteristics" variables.

Statistically significant correlations were found but the coefficients were too small to have predictive value. The largest coefficient was .14 between the factors "Satisfaction with People" and Aesthetic and it is believed that the high number of respondents (N=657-706) is responsible for the significance found at the levels .001, .01, and .05.

Sub Problem Eight

"There is no relationship between the amount of satisfaction reported by trail users on the "Leisure Satisfaction Scale" and that reported with the "Physical Characteristics" of the trails.

Similar results to those of sub problem seven were found here. Again, correlation coefficients were too small to have any predictive value but the large number of respondents (N=664-713) resulted in a number of statistically significant correlations.

Summary: Sub Problems Seven and Eight

These two sub problems were developed in order to determine the nature of the relationship between satisfaction with one's leisure activity and 'satisfaction' with other users of a particular physical environment and the physical environment itself. It was hypothesized that satisfaction with 'other users' and the 'physical conditions' would be positively related to one's Leisure Satisfaction. This has not been found to be the case in this study.

Sub Problem Nine

"There will be no significant difference between user age

categories in satisfaction derived through use of the trails."

Three differences among the means were found to be statistically significant at the $p<0.10$ level on the Aesthetic factor and one difference between the means was found to be statistically significant at the $p<0.10$ level on the Knowledge factor. The older age categories reported a greater degree of Leisure Satisfaction than did younger age categories.

Sub Problem Ten

"There will be no significant difference between Males and Females with regard to the amount of Leisure Satisfaction derived from their use of the trails".

Statistically significant differences at the $p<0.10$ level were found on four of the six factors. Females reported the greatest mean score of Leisure Satisfaction for all factors.

Sub Problem Eleven

"There will be no similarities between Beard and Ragheb's 1980 Leisure Satisfaction Scale and the modified Leisure Satisfaction Scale used in the 1986 Edmonton trail study".

An AHMAVAARA Match procedure was used to investigate the generalizability of the Beard and Ragheb scale. The strength of match between factors ranged from .93 for the Aesthetic factor to .98 for the Educational factor. Thus the two studies show a strong inclination to match one another.

Table XX presents a summary of the null hypotheses.

TABLE XX

SUMMARY OF STATUS
OF NULL HYPOTHESES
1986 EDMONTON TRAIL STUDY

	STATUS OF NULL HYPOTHESES			
	NULL HYPOTHESIS	DATA TREATMENT	RESULT	REJECT?
1.	No significant differences between groups on Enjoyment factor	Anova	Three significant differences between groups	Yes
2.	No significant differences between groups Knowledge factor	Anova	Seven significant differences between groups	Yes
3.	No significant differences between groups on Social factor	Anova	One significant difference between groups	Yes
4.	No significant differences between groups on Relaxational factor	Anova	No significant difference between groups	No
5.	No significant differences between groups on Well Being factor	Anova	Eleven significant differences between groups	Yes
6.	No significant diff-differences between groups on Aesthetic factor	Anova	No significant difference between groups	No
7.	No relationship between Leisure Sat. & "Other Users Characteristics."	Pearson Corr. Coeff.	No relationship	No
8.	No relationship between Leisure Sat. & Phys. charac.	Pearson Corr. Coeff.	No relationship	No
9.	No sig. differences between Age Categories in amounts of Leis. Sat.	Anova	Sig. difference found on two factors	Yes
10.	No significant differences between males & females	T Test	Sig. difference found on two factors	Yes
11.	No similarities between Beard & Ragheb LSS and 1986 LSS	AHMAVAARA MATCH	Strong Match	Yes

Discussion of the Findings in Relation to the Literature and Study Context

Researchers who have used the behavioural approach to investigation into outdoor recreation have consistently found that users are not a homogeneous group and that "... this heterogeneity is reflected in the diversity of psychological responses, behaviours, views and preferences of definable population subgroups" (Dunn, 1983:181). By identifying differences which exist between the definable subgroups in this study, the conclusions of previous researchers have been further substantiated. Degrees of Leisure Satisfaction derived from the use of Edmonton's urban trail system differ among the groups on four of the six factors. This finding agrees with the conclusions of Knopp and Tyger (1973) who found differences between ski tourers and snowmobilers, Lucas (1964) who found differences between paddlers and motorboaters and of Wong (1979) who found differences between cross country skiers and snowmobilers.

Differences were noted between groups in the ways they viewed each other and in the feelings they expressed about the trails themselves. These data show support for previous research and are displayed in Tables B.1 and B.2 in Appendix B.

Jacob and Schreyer stated that "... conflict must be understood as an individual's interpretation and evaluation of past and future social acts. Social contact, defined as knowledge of another's behaviour, is a necessary condition for conflict" (Jacob & Scheyer 1980:369).

If this definition is accepted, then the absence of someone, or evidence of that someone, in the physical environment should not be

'satisfying' to the user. Rather it would be indicative of a lack of need for dissatisfaction. The gaining of satisfaction is an intrinsic process. Satisfaction will logically come from the measures of the activity in which one is engaged. Dissatisfaction is an extrinsic value and one that is imposed by someone or something from outside. The degree to which one is accepting of these dissatisfiers may well rely on the amount of "... compensat[ion] by added inducements one receives" (Pondy, 1967:312).

The low correlation coefficients between the Leisure Satisfaction Scale factors and those of the "Other Users" characteristics and the Physical Characteristics" of the trails, indicates support for Herzberg's 'Hygiene-Motivator' theory. Initial assumptions were that it was logical to believe that the perceived characteristics of a particular physical environment would contribute to the satisfaction or dissatisfaction with one's own activity, as it was expressed in this study through the use of a Leisure Satisfaction Scale based upon that of Beard and Ragheb (1980). However, there seems to be little or no relationship between these factors. For Shelly and Adelberg, "Happiness is a result of the balance between satisfaction and dissatisfaction" (1972:14) which infers that satisfaction and dissatisfaction are on the same continuum. However, in the development of their argument, they introduce the concept of stimulation of the brain's centres of pleasure or pain punishment as building blocks of satisfaction or dissatisfaction. It may be, as Herzberg proposes, that the <u>stimulators</u> take different forms, such as 'Hygiene', which clear away the dissatisfiers thus returning the individual to a state of

being "Not Dissatisfied", and such as 'Motivators', which introduce satisfiers to the individual thus bringing about a state of "Satisfaction" for that individual.

This study's findings also indicate that there are differences between some age categories on two of the Leisure Satisfaction Scale factors. Again, while not a formal part of this study, the mean responses of the groups were examined and some differences between age categories were discovered with regard to the "Other Users" and the "Physical Characteristics" of the trails in relation to their feelings about "Animals" and "Comfort". These data are displayed in Tables C.1 and C.2 in Appendix C.

The findings of the study reveal differences between males and females on four of the Leisure Satisfaction Scale factors. Both "age" and "sex" were examined on these factors as a direct result of Beard and Ragheb's call for further research in these areas.

Analysis of variance was performed on the data from the "Other Users" and "Physical Characteristics" statements and significant differences were found between males and females on the "Animals", "Management" and "Comfort" factors. These data are displayed in Tables D.1 and D.2 in Appendix D.

In using Beard and Ragheb's Leisure Satisfaction Scale as the data gathering tool, this study found that the LSS is a valuable and useful instrument with which to explore Leisure Satisfaction. The two studies are separated by time, location and type of respondents, but the strength of the AHMAVAARA factor match and the 1986 study factor analysis support the factor stability and generalizability of the

instrument. The LSS has also shown that it can be used in a more specific manner than first intended. By supporting the LSS, this study also lends support to "... existing theories about leisure behaviour and play and the roles they play in people's lives." (Beard and Ragheb, 1980:30), upon which the development of the LSS is based.

Conclusions

The following conclusions were drawn from the findings of the study and the preceding discussion of the findings in relation to the literature and study context:

1. Little or no relationship exists between Leisure Satisfaction and the characteristics of other users of the trails and with the characteristics of the physical environment. Therefore, in answer to the main problem, the amount of different types of leisure satisfaction derived from the use of a particular environment seems to be <u>not</u> dependent upon the characteristics of other users and the <u>characteristics</u> of that physical environment. It must be noted that a limited number of users were questioned and a truly random sample of the general population was not done. This presents room for further study in this area. Group affiliation, specific recreation activity, and the <u>use</u> of a specific physical environment can all contribute separately to Leisure Satisfaction. Leisure Satisfaction is gained intrinsically through involvement in a "... particular, freely chosen, leisure activity which is performed for its own sake because [it offers] such intrinsic

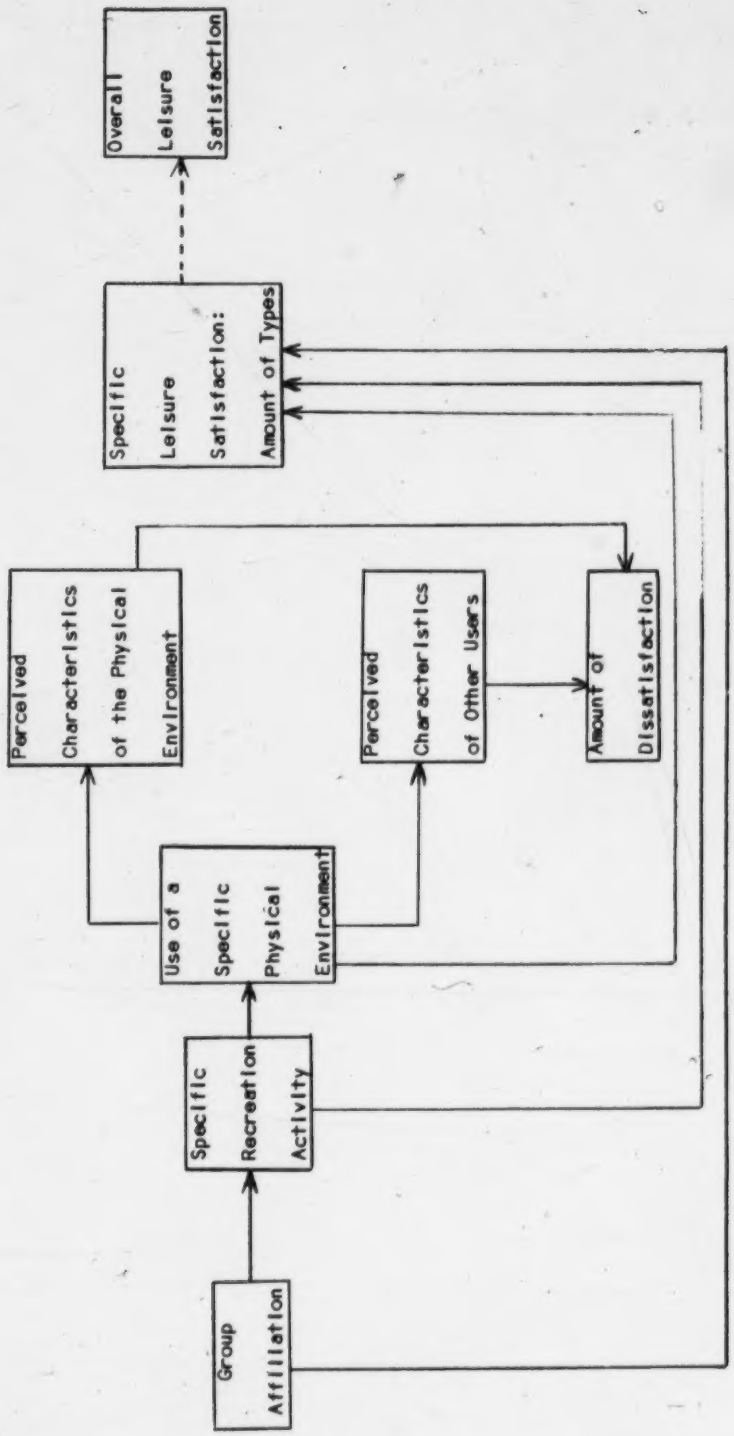

Figure V

RELATIONSHIP OF SATISFACTION

AND DISSATISFACTION TO

RECREATION USE

rewards as feelings of self confidence and competence" (Iso-Ahola, 1978:30).

2. Individuals who affiliate with clubs/organizations, which have a certain outdoor recreation activity as a focus, do differ from each other in the amount of Leisure Satisfaction derived from the use of Edmonton's urban trail system.
3. Trail users who use the trails for dissimilar activities differ from each other in their feelings toward each other and their feelings toward the physical environment.
4. People of all ages derive a generally high degree of Leisure Satisfaction from their use of the trails. Feelings about the other users were fairly consistent. Other people rated highly while vehicles and animals were rated very low. Feelings about the physical environment were consistent as well. Convenience rated highly while management and comfort rated substantially lower.
5. Females derive more Leisure Satisfaction from their use of the trails than do males. Females also show significantly more tolerance toward animals on the trails. This finding is likely influenced to a degree by the fact that most Horseriders are female, though it should be noted that only 35 Horseriders responded to the study, 31 of which are female. Females were also significantly more positive toward management practice than were males, but males were significantly more positive toward comfort.

Implications

Implications of the study for recreation managers and departments, researchers interested in urban trails systems, the Herzberg satisfaction/ dissatisfaction theory, and Beard and Ragheb's LSS are discussed in this section of the chapter.

Implications for Management Practice

The Leisure Satisfaction factors identified and categorized here present opportunities to measure the amount of agreement with management practices. Managing trail development and use presents a challenge that must be recognized. The attitude that the planners and managers know best is no longer viable. The public, the users of the facility, must have a voice in the future of the planning and operation of urban trails (Foster & Jackson, 1979). Thoughtful, informed comment is being solicited from the user groups but must be continued in order to ensure the nurturing process both for the benefit of the users and the planners/managers.

Implications for Research

This study has offered one method of data collection and treatment regarding urban trail use. The population was narrowly focused in that only members of certain clubs/organizations were surveyed. It is felt, however, that the results offer an insight into particular kinds of urban trail users and the fact that different kinds of use do produce differences in amounts of satisfaction and dissatisfaction between the groups. The relationship of these results to backcountry and wilderness results is useful to note and further study could clarify this

relationship.

Another useful area of study would be to determine if a truly random sample of urban trail users would return results similar to this study. Casual users, non club members and the public at large could be involved in a future examination.

Herzberg's Hygiene-Motivator Theory

A major finding of this study was that there is little or no relationship between the characteristics of other trail users and factors of Leisure Satisfaction with one's own activity. Another major finding was that there is little or no relationship between characteristics of the physical environment and factors of Leisure Satisfaction with one's own activity. Herzberg's theory predicted that satisfiers or 'Motivators', which result in satisfaction, are gained intrinsically through the actions of doing the activity. The second group [of factors] operates as an essential base to the first and is associated with "... compensation, ... conditions and administrative practices" (Herzberg, 1959:115). These are the 'Hygiene' factors. A study of these factors could provide further evidence of the validity of the theory developed by Herzberg. Further discussion on the applicability of Herzberg's theory appears in Appendix E, page 141.

Beard and Ragheb's Leisure Satisfaction Scale

A further major finding was that Beard and Ragheb's short form Leisure Satisfaction Scale is generally a reliable instrument with which to gather and study leisure satisfaction data. Slight name changes were made for three of their six factors mainly because their

Psychological factor variables did not load together on the 1986 factor analysis.

A replication study would provide further evidence of the parsimony and effectiveness of the Leisure Satisfaction Scale as a data gathering and study instrument. It would also add to our understanding of the Psychological factor and how those variables associate with other variables of the short form LSS. If a replication study were to be done in the light of Herzberg's theory, the behaviour of the Aesthetic factor should receive further scrutiny.

Concluding Comments

The findings of this study led to the conclusion that little or no relationship exists between Leisure Satisfaction and the characteristics of other trail users and the characteristics of the physical environment where the trail users do their activity.

In developing their Leisure Satisfaction Scale, Beard and Ragheb stated

> Leisure satisfaction is defined as the positive perceptions or feelings which an individual forms, elicits or gains as a result of engaging in leisure activities and choices. It is the degree to which one is presently content or pleased with his/her general leisure experiences and situations. This positive feeling of contentment results from the satisfaction of felt or unfelt needs of the individual.
>
> (Beard and Ragheb, 1980:22).

The findings of this study indicate that trail users do view their leisure experience in a positive fashion and derive a high degree of satisfaction from their activity. The findings have also indicated that what was termed 'satisfaction' with other users and physical

characteristics of the trails in the beginning of the study, seems to be acting in a manner different from Leisure Satisfaction. Further study is needed to clarify and understand the nature of this difference.

The study has also shown that users who differ from each other in type of activity also differ from each other in amount of Leisure Satisfaction derived from their use of trails.

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APPENDIX A

THE STUDY QUESTIONNAIRE

EDMONTON RIVER VALLEY
AND
RAVINE SYSTEM
TRAILS
QUESTIONNAIRE

1986

EDMONTON PARKS AND RECREATION
RIVER VALLEY OUTDOOR CENTRE,
10125 - 97 AVENUE
EDMONTON, ALBERTA
T5K 0B3

With which of the following clubs or organizations are you affiliated. (Circle as many numbers as is appropriate)

KINSMEN JOGGERS CLUB..... 1

EDMONTON NORDIC SKI CLUB..... 2

CANADIAN SKI PATROL SYSTEM..... 3

EDMONTON BIRD CLUB..... 4

WHITEMUD EQUESTRIAN CENTRE..... 5

EDMONTON OVERLANDERS ORIENTEERING CLUB. 6

EDMONTON BICYCLE COMMUTERS..... 7

FEDERATION OF ALBERTA NATURALISTS..... 8

EDMONTON BICYCLE AND TOURING CLUB..... 9

NONE OF THE ABOVE..... 10

OTHER (PLEASE LIST)..... 11

EDMONTON RIVER VALLEY AND RAVINE SYSTEM
TRAIL QUESTIONNAIRE

1986

A Survey of Levels of Satisfaction With Trail Use

1. Do you use any of the trails in the parks listed on the accompanying map? (Please circle the appropriate number)

   YES..... 1 (If yes) please proceed to question 2 and complete the questionnaire.

   NO..... 2 (If no) You may wish to comment on why you do not use any of the River Valley trails. Please use the last page for your comments. Above all, please complete questions 13 and 14, and return the questionnaire in the enclosed, self-addressed, pre-stamped envelope. Thank you.

2. Which trails do you use most often? (Refer to the map and list up to 3 parks where you use the trails, in order of frequency of use.

   1 _____

   2 _____

   3 _____

3. For which of the following activities do you use the trails? (Please circle as many numbers as appropriate).

   CROSS-COUNTRY SKIING..... 1

   JOGGING..... 2

   BICYCLING..... 3

   HORSEBACK RIDING..... 4

   NATURE WALKS..... 5

   HIKING..... 6

   ORIENTEERING..... 7

   OTHER (PLEASE LIST)..... 8

4. i) Which activity listed in question 3 do you participate in most frequently? (Your major activity) (put number of activity in box)

MOST FREQUENT ACTIVITY..... ☐

ii) Which activity listed in question 3 do you participate in the second most frequently? (put number of activity in box)

SECOND MOST FREQUENT ACTIVITY.... ☐

5. During which season do you normally use the trails for your most frequent or MAJOR activity? (Please circle the appropriate number)

SNOW SEASON..... 1

DRYLAND (NO SNOW) SEASON..... 2

BOTH SNOW AND DRYLAND SEASON..... 3

6. What days do you most frequently use the trails? (Please circle all that apply)

SUNDAY..... 1

MONDAY..... 2

TUESDAY..... 3

WEDNESDAY..... 4

THURSDAY..... 5

FRIDAY..... 6

SATURDAY..... 7

7. At what time of the day do you normally use the trails for your major activity? (Please circle the appropriate number)

BEFORE 8:00 A.M..... 1

BETWEEN 8:00 A.M. - 11:00 A.M.... 2

BETWEEN 11:00 A.M. - 2:00 P.M.... 3

BETWEEN 2:00 P.M. - 6:00 P.M..... 4

AFTER 6:00 P.M..... 5

8. The statement listed below refers to how people may feel upon meeting others using the same trails. Please state your MAJOR trail use activity in the space at the right (i.e. Jogging, Skiing, Horse Riding, etc.). Then indicate your level of agreement with the following statement by circling the number in the column most appropriate to your level of satisfaction. Circling 1 means you strongly disagree with the statement, 2 means you disagree but not strongly, 3 means you agree with the statement but not strongly, 4 means you strongly agree with the statement, and circling 5 means it doesn't matter to you if you see these people or not.

MY MAJOR TRAIL ACTIVITY

IS: _____

"WHEN I USE THE TRAILS IN EDMONTON'S RIVER VALLEY, MEETING PEOPLE DOING THE ACTIVITIES LISTED BELOW IS VERY SATISFYING TO ME."

	STRONGLY DISAGREE 1	DISAGREE 2	AGREE 3	STRONGLY AGREE 4	NEITHER AGREE NOR DISAGREE 5
PEOPLE WALKING/HIKING.....	1	2	3	4	5
PEOPLE CYCLING.....	1	2	3	4	5
PEOPLE JOGGING.....	1	2	3	4	5
PEOPLE ENJOYING NATURE.....	1	2	3	4	5
PEOPLE RIDING HORSES.....	1	2	3	4	5
PEOPLE RIDING TRAIL MOTOR CYCLES.....	1	2	3	4	5
PEOPLE DRIVING 4 X 4 VEHICLES.....	1	2	3	4	5
PEOPLE WALKING UNLEASHED DOGS.....	1	2	3	4	5
PEOPLE WALKING LEASHED DOGS.....	1	2	3	4	5
PEOPLE ORIENTEERING.....	1	2	3	4	5
PEOPLE SKIING.....	1	2	3	4	5

9. The statement listed below refers to how people may feel regarding the trails themselves. Please state your MAJOR trail use activity in the space at the right (i.e. Jogging, Skiing, Horse Riding, etc.). Then indicate the level of agreement with the following statement by circling the number in the column most appropriate to your level of satisfaction.

MY MAJOR TRAIL ACTIVITY IS: _____

"I AM VERY SATISFIED WITH THE:"

	STRONGLY DISAGREE 1	DISAGREE 2	AGREE 3	STRONGLY AGREE 4	NEITHER AGREE NOR DISAGREE 5
LOCATION OF THE TRAILS.....	1	2	3	4	5
ACCESS TO THE TRAILS.....	1	2	3	4	5
CHANGE/SHOWER FACILITIES.....	1	2	3	4	5
MAINTENANCE OF THE TRAILS (UPKEEP).....	1	2	3	4	5
ACCESS TO WASHROOMS.....	1	2	3	4	5
SAFETY FROM PERSONAL/ PHYSICAL CONFRONTATION.....	1	2	3	4	5
SAFETY OF THE TRAILS IN TERMS OF MY EXPERTISE LEVEL.....	1	2	3	4	5
TRAIL SURFACE.....	1	2	3	4	5
LOCATIONAL SIGNS.....	1	2	3	4	5
DIRECTIONAL SIGNS.....	1	2	3	4	5
LENGTH OF TRAILS FOR MY USE.....	1	2	3	4	5
TRAIL SYSTEM OVERALL.....	1	2	3	4	5

In this next section, we wish to discover how you feel about your MAJOR trail activity in a more general way. Again, please complete the "Leisure Satisfaction Scale" from the point of view of your MAJOR trail activity.

LEISURE SATISFACTION SCALE

MY MAJOR TRAIL ACTIVITY

10. IS: _____

DIRECTIONS: Below are some statements on how persons feel about and perceive their leisure activities. Please read each statement and then circle the appropriate answer. If the statement is ALMOST NEVER TRUE, circle "1", if the statement is ALMOST ALWAYS TRUE, circle "5", if you are in between, circle the number which describes how true the statement is for you. There are no right or wrong answers. Please answer this section from the point of view of your major trail activity.

	ALMOST NEVER TRUE 1	SELDOM TRUE 2	SOMETIMES TRUE 3	OFTEN TRUE 4	ALMOST ALWAYS TRUE 5
1) MY LEISURE ACTIVITY IS INTERESTING TO ME.....	1	2	3	4	5
2) MY LEISURE ACTIVITY GIVES ME SELF-CONFIDENCE.....	1	2	3	4	5
3) MY LEISURE ACTIVITY GIVES ME A SENSE OF ACCOMPLISHMENT.....	1	2	3	4	5
4) I USE MANY DIFFERENT SKILLS AND ABILITIES IN MY LEISURE ACTIVITY.....	1	2	3	4	5
5) MY LEISURE ACTIVITY INCREASES MY KNOWLEDGE ABOUT THINGS AROUND ME.....	1	2	3	4	5
6) MY LEISURE ACTIVITY PROVIDES OPPORTUNITIES TO TRY NEW THINGS.....	1	2	3	4	5
7) MY LEISURE ACTIVITY HELPS ME TO LEARN ABOUT MYSELF.....	1	2	3	4	5
8) MY LEISURE ACTIVITY HELPS ME TO LEARN ABOUT OTHER PEOPLE.....	1	2	3	4	5
9) I HAVE SOCIAL INTERACTION WITH OTHERS THROUGH MY LEISURE ACTIVITY...	1	2	3	4	5

(Q. 10 Continued)	ALMOST NEVER TRUE 1	SELDOM TRUE 2	SOMETIMES TRUE 3	OFTEN TRUE 4	ALMOST ALWAYS TRUE 5
10) MY LEISURE ACTIVITY HAS HELPED ME TO DEVELOP CLOSE RELATIONSHIPS WITH OTHERS.....	1	2	3	4	5
11) THE PEOPLE I MEET IN MY LEISURE ACTIVITY ARE FRIENDLY.....	1	2	3	4	5
12) I ASSOCIATE WITH PEOPLE IN MY FREE TIME WHO ENJOY DOING MY LEISURE ACTIVITY A GREAT DEAL.....	1	2	3	4	5
13) MY LEISURE ACTIVITY HELPS ME TO RELAX.....	1	2	3	4	5
14) MY LEISURE ACTIVITY HELPS RELIEVE STRESS.....	1	2	3	4	5
15) MY LEISURE ACTIVITY CONTRIBUTES TO MY EMOTIONAL WELL BEING.....	1	2	3	4	5
16) I ENGAGE IN MY LEISURE ACTIVITY SIMPLY BECAUSE I LIKE DOING IT.....	1	2	3	4	5
17) MY LEISURE ACTIVITY IS PHYSICALLY CHALLENGING.....	1	2	3	4	5
18) I DO MY LEISURE ACTIVITY TO DEVELOP MY PHYSICAL FITNESS.....	1	2	3	4	5
19) I DO MY LEISURE ACTIVITY TO RESTORE ME PHYSICALLY.....	1	2	3	4	5
20) MY LEISURE ACTIVITY HELPS ME TO STAY HEALTHY.....	1	2	3	4	5
21) THE AREAS OR PLACES WHERE I ENGAGE IN MY LEISURE ACTIVITY ARE FRESH AND CLEAN.....	1	2	3	4	5
22) THE AREAS OR PLACES WHERE I ENGAGE IN MY LEISURE ACTIVITY ARE INTERESTING.....	1	2	3	4	5
23) THE AREAS OR PLACES WHERE I ENGAGE IN MY LEISURE ACTIVITY ARE BEAUTIFUL.....	1	2	3	4	5
24) THE AREAS OR PLACES WHERE I ENGAGE IN MY LEISURE ACTIVITY ARE WELL DESIGNED.....	1	2	3	4	5

11. Have you ever stopped using a trail or trails in the River Valley because you were not satisfied with something? (Please circle the appropriate number)

    YES..... 1 (If yes) please comment about "why?", in the space below.

    NO..... 2

    _____

    _____

    _____

    _____

12. Briefly, in the space provided, state the reason(s) you use the River Valley trails in Edmonton.

    _____

    _____

    _____

    _____

    _____

13. Please state your age _____

14. Please indicate your sex (Circle the appropriate number)

    MALE..... 1

    FEMALE..... 2

15. What is your household annual income level? (Please circle the appropriate number)

    LESS THAN $15,000..... 1

    BETWEEN $15,000 - $19,999..... 2

    BETWEEN $20,000 - $29,999..... 3

    BETWEEN $30,000 - $39,999..... 4

    BETWEEN $40,000 - $49,999..... 5

    OVER $50,000..... 6

16. What level of education have you attained? (Please circle the appropriate number)

HIGH SCHOOL..... 1

UNIVERSITY GRADUATE..... 2

UNIVERSITY POST GRADUATE..... 3

COLLEGE DIPLOMA..... 4

TECHNICAL SCHOOL DIPLOMA..... 5

OTHER (PLEASE LIST)..... 6

17. Please use this space for any further comments you wish to make.

Thank you.

APPENDIX B

ANALYSES OF VARIANCE BY GROUP:

TABLE B.1

SATISFACTION WITH FACTORS

OF

"OTHER USER CHARACTERISTICS"

TABLE B.2

SATISFACTION WITH FACTORS

OF

"PHYSICAL CHARACTERISTICS OF THE TRAILS"

Table B.1

ANALYSIS OF VARIANCE
BY GROUP
SATISFACTION WITH FACTORS OF
"OTHER USER CHARACTERISTICS"

	SATISFACTION WITH PEOPLE			SATISFACTION WITH VEHICLES			SATISFACTION WITH ANIMALS			X	N
	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE		
(1)Kinsmen Joggers	4.11	.62	2-5	1.10	.38	1-4	2.37	.83	1-5	2.53	184-185
(2)Edmonton Nordic Ski Club	4.15[a]	.79	1.67-5	1.10	.41	1-3.5	2.40	1.04	1-5	2.55	86-90
(3)Whitemud Equine	3.70[b]	.67	2-5	1.04[b]	.19	1-2	3.69[a]	.58	2.67-5	2.81	35
(4)Edmonton Bicycle Commuters	4.01	.89	1-5	1.15	.53	1-3.5	2.50	1.03	1-5	2.56	83-84
(5)Edm. Overlanders Orienteering Club	4.15[b]	.62	2.67-5	1.05	.28	1-3	2.34[b]	.82	1.4-33	2.51	58-60
(6)Edmonton Bird Club	3.96	.72	2-5	1.09	.46	1-4	2.61	.80	1.33-4.33	2.55	46-48
(7)Federation of Alberta Naturalists	4.09	.69	2-5	1.09	.34	1-3	2.66	.93	1-5	2.61	60-65

Table B.1 continued

	SATISFACTION WITH PEOPLE			SATISFACTION WITH VEHICLES			SATISFACTION WITH ANIMALS			X	N
	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE		
(8)Edmonton Bicycle & Touring Club	3.92	.92	1-5	1.20[a]	.59	1-5	2.43	.97	1-4.67	2.52	159-160
F Ratio	2.3777			1.3853			9.9261				
F Prob	0.0208			0.2084			0.0000				
Significantly different groups at 0.100 level	None			None			3-1, 3-2, 3-4, 3-5 3-6, 3-7 3-8.				
X	4.03			1.12			2.51		2.57		
N	727			711			719				

a = high mean
b = low mean

Table B.2

ANALYSIS OF VARIANCE
BY GROUP
SATISFACTION WITH FACTORS OF
"PHYSICAL CHARACTERISTICS OF THE TRAILS"

	PHYSICAL CHARACTERISTICS OF THE TRAILS FACTORS										
	SATISFACTION WITH PEOPLE			SATISFACTION WITH VEHICLES			SATISFACTION WITH ANIMALS			X	N
	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE		
(1)Kinsmen Joggers	4.47[a]	.55	2-5	3.79	.83	1.67-5	3.71[a]	.81	1-5	3.99	184-186
(2)Edmonton Nordic Ski Club	4.31	.71	1.67-5	3.73	.93	1-5	3.30	.87	1-5	3.78	87-88
(3)Whitemud Equine Centre	3.79[b]	.74	2-5	3.72[b]	.94	1.67-5	3.16	.74	1-5	3.56	36
(4)Edmonton Bicycle Commuters	4.09	.69	1-5	3.69	.76	1.33-5	3.22	.73	1.67-5	3.67	83
(5)Edmonton Overlanders Orienteering Club	4.31	.59	2.67-5	3.73	.77	2-5	3.14[b]	.65	1.67-4.33	3.73	60
(6)Edmonton Bird Club	4.21	.58	2-5	3.94[a]	.64	2-5	3.27	.73	1-5	3.81	47-48
(7)Federation of Alberta Naturalists	4.11	.67	2-5	3.82	.72	1.67-5	3.37	.59	2-5	3.77	64

Table B.2 continued

	PHYSICAL CHARACTERISTICS OF THE TRAILS FACTORS										
	SATISFACTION WITH PEOPLE			SATISFACTION WITH VEHICLES			SATISFACTION WITH ANIMALS			X	N
	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE		
(8)Edmonton Bicycle & Touring Club	4.16	.75	1-5	3.81	.86	1-5	3.16	.76	1-5	3.71	161-163
F Ratio	6.9426			0.5165			9.0193				
F Prob	0.0000			0.8225			0.0000				
Significantly Different groups (at 0.100) Level)	1-3, 1-4 1-7, 1-8 2-3, 5-3			None			1-2, 1-3 1-4, 1-5 1-6, 1-8				
X	4.24			3.78			3.35			3.77	
N	728			724			722				

a = high mean
b = low mean

APPENDIX C

ANALYSES OF VARIANCE BY AGE CATEGORY:

TABLE C.1

SATISFACTION WITH FACTORS

OF

"OTHER USER CHARACTERISTICS"

TABLE C.2

SATISFACTION WITH FACTORS

OF

"PHYSICAL CHARACTERISTICS OF THE TRAILS"

Table C.1

ANALYSIS OF VARIANCE: SATISFACTION WITH FACTORS OF "OTHER USER CHARACTERISTICS" BY AGE CATEGORY

		FACTORS OF OTHER USER CHARACTERISTICS										
		SATISFACTION WITH PEOPLE			SATISFACTION WITH VEHICLES			SATISFACTION WITH ANIMALS			X	N
AGE		$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE		
25 & Under	(1)	4.06	.86	1.6 - 5	1.31	.60	1.0 - 3	2.89	1.03	1 - 5	2.75	72 - 73
26 - 30	(2)	4.02	.78	1.0 - 5	1.13	.44	1.3 - 5	2.61	.95	1 - 5	2.59	116-117
31 - 35	(3)	3.97	.87	1.0 - 5	1.09	.44	1.0 - 5	2.42	.92	1 - 5	2.49	119-122
36 - 40	(4)	4.02	.76	1.0 - 5	1.13	.48	1.0 - 4	2.38	.96	1 - 5	2.51	129-131
41 - 45	(5)	4.08	.68	2.0 - 5	1.07	.36	1.0 - 4	2.42	.88	1 - 5	2.52	93
46 - 50	(6)	4.06	.73	1.6 - 5	1.05	.29	1.0 - 3	2.44	1.01	1 - 4.7	2.52	59 - 60
51 - 55	(7)	4.05	.87	2.0 - 5	1.06	.25	1.0 - 2	2.45	.99	1 - 5	2.52	47 - 50
56 - 60	(8)	3.96	.60	2.3 - 5	1.02	.09	1.0 - 1.5	2.32	.83	1.33 - 4.33	2.43	30 - 33
60+	(9)	4.11	.62	2.0 - 5	1.08	.26	1.0 - 2	2.59	.86	1 - 4.7	2.59	31 - 37
$\bar{X}$		4.03			1.12			2.49				
N		714			698			706				

TABLE C.1 Continued

		SATISFACTION WITH PEOPLE	SATISFACTION WITH VEHICLES	SATISFACTION WITH ANIMALS
Significantly Differently Groups (at 0.100 Level)		None	**	1 - 4
F Ratio		0.2841	2.6284	2.4363
F Prob		0.9712	0.0077	0.0133
Sum of Squares:	Between	1.3513	3.7789	17.4047
	Within	419.1312	123.8214	622.4005
	Total	420.4825	127.6003	639.8052
Mean Squares:	Between	0.1689	0.4724	2.1756
	Within	0.5945	0.1797	0.8930

** F.Prob is significant but Scheffe Procedure cannot determine the location of the difference.

Table C.2

ANALYSIS OF VARIANCE: SATISFACTION WITH FACTORS OF "PHYSICAL CHARACTERISTICS OF THE TRAILS" BY AGE CATEGORY

		FACTORS OF PHYSICAL CHARACTERISTICS OF THE TRAILS										
		SATISFACTION WITH CONVENIENCE			SATISFACTION WITH MANAGEMENT			SATISFACTION WITH COMFORT			$\bar{X}$	N
AGE		$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE	$\bar{x}$	SD	RANGE		
25 and Under	(1)	4.12[b]	.70	2 - 5	3.90	.75	1.7 - 5	3.09[b]	.73	1 - 5	3.70	73
26 - 30	(2)	4.19	.70	1.75 - 5	3.80	.81	1.7 - 5	3.16	.65	1.67-5	3.72	118
31 - 35	(3)	4.20	.74	1 - 5	3.57[b]	.86	1 - 5	3.21	.67	1-4.65	3.66	122
36 - 40	(4)	4.27	.68	1 - 5	3.78	.91	1 - 5	3.44	.68	1 - 5	3.83	131-132
41 - 45	(5)	4.29	.66	2.5 - 5	3.73	.89	1.3-5	3.52	.56	1.67-5	3.85	94
46 - 50	(6)	4.32	.61	2 - 5	3.91	.77	1.7-5	3.66[a]	.64	2 - 5	3.96	58 - 59
51 - 55	(7)	4.25	.64	1.5-5	3.77	.76	2 - 5	3.44	.59	1.33-5	3.82	49 - 50
56 - 60	(8)	4.29	.52	2.75-5	3.89	.54	3 - 5	3.37	.65	1 - 5	3.85	31
60+	(9)	4.40[a]	.46	3.5-5	3.93[a]	.65	2 - 5	3.57	.58	2 - 5	3.97	36 - 37
$\bar{X}$		4.25			3.78			3.63			3.90	
N		715			712			714				

a = High mean b = Low mean

Table C.2
(continued)

		FACTORS OF PHYSICAL CHARACTERISTICS OF THE TRAILS		
		SATISFACTION WITH CONVENIENCE	SATISFACTION WITH MANAGEMENT	SATISFACTION WITH COMFORT
Significantly Differently Groups (at 0.100 Level)		None	None **	1-6, 2-6
F Ratio		0.8677	1.6941	4.8803
F Prob		0.5434	0.0963	0.0000
Sum of Squares:	Between	3.1396	9.1084	4.8803
	Within	319.3122	472.4687	407.5600
	Total	322.4518	481.5771	430.2594
Mean Squares:	Between	0.3924	1.1385	2.8374
	Within	0.4523	0.6721	0.5814

** F.Prob is significant but Scheffe Procedure cannot determine the location of the difference.

APPENDIX D

ANALYSES OF VARIANCE BY SEX

TABLE D.1

SATISFACTION WITH FACTORS

OF

"OTHER USER CHARACTERISTICS"

TABLE D.2

SATISFACTION WITH FACTORS

OF

"PHYSICAL CHARACTERISTICS OF THE TRAILS"

Table D.1

ANALYSIS OF VARIANCE:
SATISFACTION WITH FACTORS OF
"OTHER USER CHARACTER-
ISTICS" BY SEX

	OTHER USER CHARACTERISTICS									
	SATISFACTION WITH PEOPLE			SATISFACTION WITH VEHICLES			SATISFACTION WITH ANIMALS			$\bar{X}$
SEX	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	
Male	4.02	.74	453	1.10	.43	443	2.38	.91	448	2.50
Female	4.05	.81	271	1.14	.45	265	2.70	.98	268	2.63
T Value	-0.62			-1.07			-4.47			
P	0.539			0.284			0.000**			

** Significantly different at .01 level.

Table D.2

ANALYSIS OF VARIANCE: SATISFACTION WITH FACTORS OF "PHYSICAL CHARACTERISTICS OF THE TRAILS" BY SEX

	PHYSICAL CHARACTERISTICS									
	SATISFACTION WITH PEOPLE			SATISFACTION WITH VEHICLES			SATISFACTION WITH ANIMALS			$\bar{X}$
SEX	$\bar{x}$	SD	N	$\bar{x}$	SD	N	$\bar{x}$	SD	N	
Male	4.26	.67	455	3.69	.82	454	3.66	.68	455	3.87
Female	4.22	.69	270	3.92	.80	268	3.53	.63	269	3.89
T Value	0.75			-3.62			2.51			
P	0.451			0.000**			0.012*			

** Significantly different at .01 level.

APPENDIX E

INTERPRETIVE FRAMEWORK

APPENDIX E

INTERPRETIVE FRAMEWORK

This study originally proposed to use Herzberg's (1959) two factor "Hygiene-Motivator" theory as a framework with which to help interpret the data.

Herzberg's theory was not directly tested in this study, therefore, given the speculative nature of the following text, the decision was made to discuss the data, in this context, outside the main body of the study.

Shelly and Adelberg's (1972) work is also discussed in conjunction with Herzberg's theory in an attempt to further explore the ideas and directions suggested by the results of the data analysis.

Interpretive Framework

Herzberg proposed a two factor, "Hygiene vs. Motivator" theory related to job satisfaction which assumes that satisfaction and dissatisfaction exist in two different dimensions, and aspects that produce dissatisfaction are different from those that produce satisfaction. According to Herzberg, dissatisfaction can be produced by such factors as health hazards, interpersonal relations, physical conditions, and managerial practices - the 'Hygiene' factors; while satisfaction and motivation come from such factors as meeting the need for recognition, achievement, responsibility and personal growth - the 'Motivator' factors. With this theory, he accepts Maslow's notion of higher and lower level needs, but sets out distinctions between them as Hygiene (dissatisfiers) and Motivators (satisfiers). In 17 empirical

studies carried out by Herzberg and his associates, most respondents answered that they 'felt good' about factors relating to their achievement, recognition and responsibility, while they 'felt bad' about factors dealing with working conditions, peer relations, supervision and company policy.

The dissatisfier factors describe what one's relationship is to the context or environment in which one performs his job. These factors essentially serve to prevent job dissatisfaction while having little effect on positive job attitudes. These have been named the 'Hygiene' factors

> In an analogy to the medical use of the term meaning 'preventive and environmental'. Another term for these factors...is 'maintenance' factors. The 'satisfier' factors were made the 'motivators' since the other findings of the study suggest that they are effective in motivating the individual to superior performance and effort. (Deci, 1972:89).

These motivator factors relate directly to what the person does as compared to the hygiene factors which relate to the situation in which he does it. According to Deci "...the two dimensions of job attitudes reflected a two dimensional need structure; one need system for the avoidance of unpleasantness and a parallel need system for personal growth." (Deci, 1972:90). This line of thought gave rise to the possibility that factors which affect attitudes may not always operate on a continuum but may exert influence only in a positive direction. For Herzberg, this meant that "...the presence of certain factors would act to increase the individual's satisfaction but the failure of these factors to occur would not necessarily give rise to dissatisfaction." (Herzberg, 1959:111).

Herzberg presents a description of a person who is operating at a neutral point with no attitudes, positive or negative, about something in his or her life. If 'motivator' or satisfier factors enter, then he or she will gain satisfaction which will lead a person toward becoming happy. This is shown in Figure E.1:

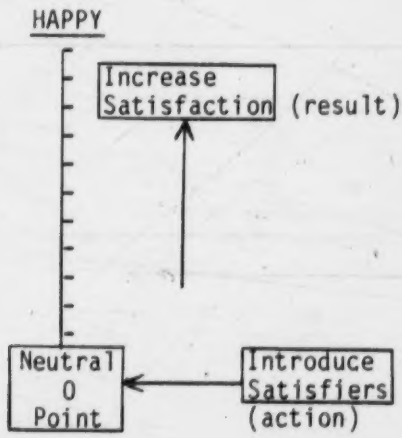

Figure E.1

SATISFIERS ACTING TO
MOVE TOWARDS
A STATE OF BEING HAPPY

The more satisfiers introduced to the individual, the greater the amount of satisfaction is achieved. This in turn leads to a happy state. For Herzberg, these satisfiers came directly from the intrinsic value the individual received from doing their activity.

If the satisfiers or motivators were to be removed, the individual would not remain in a happy state but would return toward the neutral state. This is shown in Figure E.2:

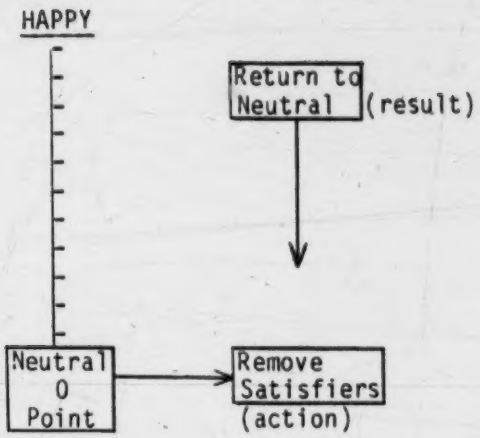

Figure E.2

REMOVAL OF SATISFIERS
ACTING TO RETURN
INDIVIDUAL
TO A NEUTRAL STATE

The more satisfiers that are removed from the situation the further toward the neutral point the individual moves until a Not Dissatisfied state is reached. For Herzberg, this is not a state of being dissatisfied nor does it produce a person who is unhappy. It merely leaves the individual Not Satisfied.

In this theory, there is a separate group of factors that act as dissatisfiers which can lead an individual to a state of being unhappy with a situation. The introduction of these dissatisfiers increases dissatisfaction, the result of which is to lead toward a state of being unhappy. This is diagrammed in Figure E.3:

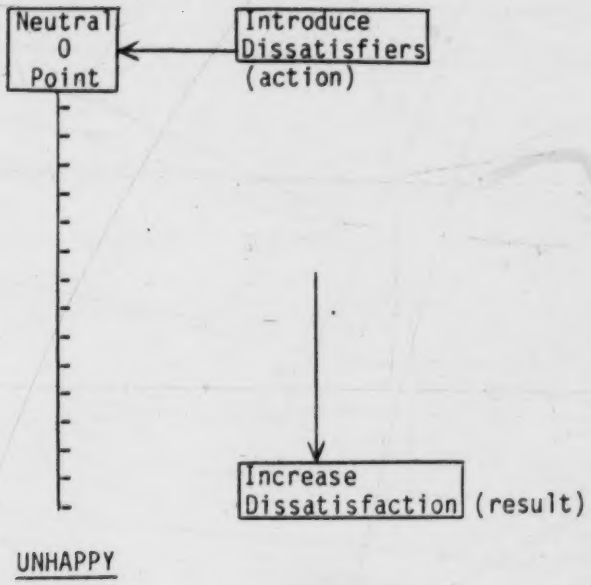

Figure E.3

DISSATISFIERS ACTING
TO MOVE INDIVIDUAL
TO A STATE OF BEING
UNHAPPY

The more dissatisfiers that are introduced, the more the individual becomes unhappy. For Herzberg, these dissatisfiers or 'Hygiene' factors relate directly to the situation or environment in which one does his or her activity.

The removal of the dissatisfiers would then begin to return the individual to the neutral state. The more the dissatisfiers are removed, the closer one comes to a state of being not unhappy. This is shown in Figure E.4:

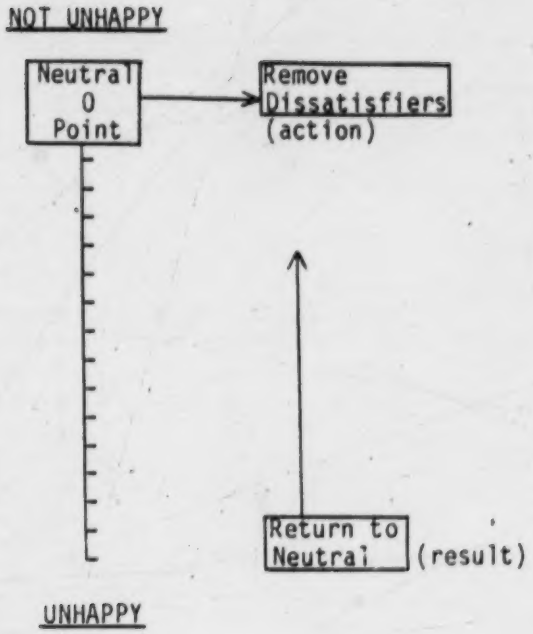

Figure E.4

REMOVAL OF DISSATISFIERS
ACTING TO MOVE
INDIVIDUAL TO A STATE
OF BEING NOT UNHAPPY

The removal of the dissatisfiers does not result in a happy individual, only in a Not Unhappy individual who may only return to the neutral point. Satisfier factors such as recognition, achievement, responsibility and personal growth are needed to move beyond neutral into the realm of satisfaction and happiness. Satisfaction can best be understood in relation to other terms. Satisfaction seems to be part of a process involving "pleasure" and "happiness" which exist at different levels and for different lengths of time. In order to understand satisfaction in this light, the three principal dimensions of pleasure-displeasure, satisfaction-dissatisfaction and happiness-

unhappiness are addressed.

Pleasure may be seen as one step in the process which stems from what Shelly and Adelberg term "...simple positive reinforcement [which is] any internal change, behaviour, or external event which produces pleasure." (Shelly and Adelberg, 1972:9). The complexity and duration of the reinforcement process "...differentiates a simple positive reinforcement from a positive reinforcement." (Shelly and Adelberg, 1972:9). They accept Berlyne's definition for something being positively reinforcing as:

> Responses regularly followed by reinforcements will be performed more frequently than alternative responses simultaneously available and generally [positive] reinforcements increase the probability of a continuation or an immediate repetition of the same response.
> (Berlyne, 1967:11)

Pleasure seems to involve the stimulation of the pleasure centres of the brain which has been found to be effective in reinforcing behaviours. Apparent displeasure can be achieved by an accumulation of simple negative reinforcements which lead to negative reinforcements. The conceptualizing of 'pleasure' and 'displeasure' as results of the stimulation of basic pleasure/pain brain centres, which lead to simple reinforcement, permits the derivation of certain other results which can be empirically tested. As Shelly and Adelberg remarked

> Stimulation and reinforcement are elementary building blocks, a special type of 'hypothetical' construct whose major purpose is to permit the development of further ideas. In the development of these further ideas, simple positive and simple negative reinforcements will be combined with certain other hypothesized relationships. Such relationships will subsequently be combined in various ways to arrive at statements about behaviour which are more directly testable.
> (Shelly and Adelberg, 1972:12)

This concept is shown diagramatically in Figure E.5

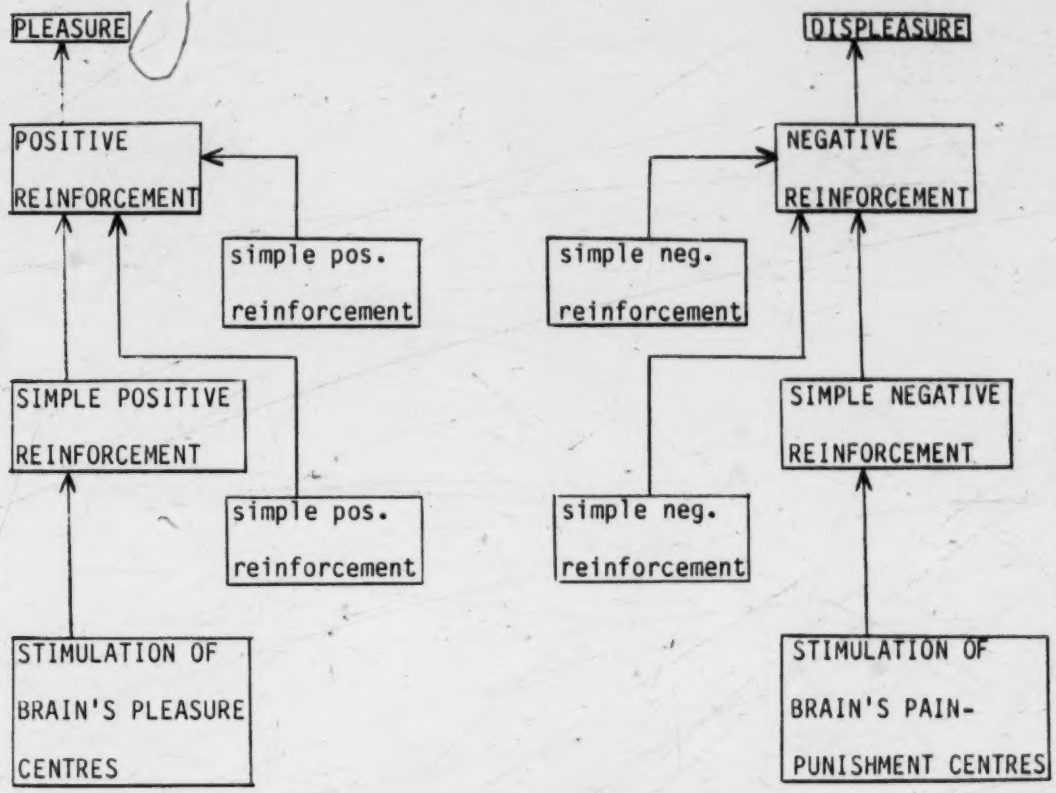

FIGURE E.5

ADAPTED FROM SHELLY AND ADELBERG
STIMULATION/REINFORCEMENT RELATIONSHIP

This 'approach' allowed Shelly and Adelberg to infer the existence of reinforcements from the observations of behaviours in natural settings and to extend these to the analysis of satisfaction in general. Shelly and Adelberg's main point is that happiness for an individual is reached through a series of steps or building blocks, which are actually three basic dimensions. According to them, stimulation of the brain's centres of pleasure or pain-punishment leads to simple

reinforcement. Enough simple reinforcement of these centres, given sufficient duration, will lead to reinforcement. These, in turn, lead to brief moments of either pleasure or displeasure which leads to satisfaction or dissatisfaction which then leads to happiness or unhappiness for an individual. This end result is diagrammed in Figure E.6

FIGURE E.6

ADAPTED FROM SHELLY AND ADELBERG
CAUSES OF HAPPINESS/UNHAPPINESS

If we accept these terms in the light of this progression, happiness becomes the 'end result' or the ultimate for which to strive. However, other writers substitute 'satisfaction' in the place of happiness in the hierarchy. Dumazedier, for instance, stated that "The search for a state of satisfaction is the prime condition of leisure." (Dumazedier, 1974:75), and Bloch and Bruce made the point that "In making leisure choices, people seek certain satisfactions from an activity." (Bloch and Bruce, 1984:75). Shelly and Adelberg though, concluded that

> happiness is a result of the balance between satisfaction and dissatisfaction. If, over an individual's recent life as a whole, one exceeds the other, then that individual will be happy or unhappy, which is a state of affairs somewhat accurately reflected by the individual's saying that he is happy or unhappy.
> (Shelly and Adelberg, 1972:14)

Locke was closer to Shelly and Adelberg with his statement "...satisfaction may be defined as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences." (Locke, 1976:1300). This pleasurable or positive emotional state, as a result of [job] experiences can be related to one's leisure experiences. As pleasurable/positive experiences build into individual leisure satisfaction experiences, so do the individual leisure satisfaction episodes build toward overall happiness with one's life experience.

Happiness seems to be the end result of the accumulation of many satisfactions, and becomes a more or less permanent state of mind.

Understanding and reaching a state of happiness may well be akin to being able to reach a state of control over one's life. The prepotent aspects need to be in place in order to reach either state. In the case of happiness, one must have experienced pleasure, or a series of "brief pleasurable moments" which lead to moments or incidents of satisfaction, which, in turn, lead to or contribute to overall happiness with one's pleasurable moments" which lead to moments or incidents of satisfaction, which, in turn, lead to or contribute to overall happiness with one's state of affairs or life as a whole.

In the case of total life control, one must have the prepotent aspects of physiological needs, safety needs, belongingness and love, and esteem taken care of, more or less, in order to allow time and effort for reaching or striving for a state of self-actualization. With the help of the higher standard of living extant in North America today, "The dominant motives of members (of organizations) are the higher order ego and social motives, particularly those for personal

gratification, independence, self-expression, power and self-actualization" (Katz and Kahn, 1978:398).

Methodological Framework

Beard and Ragheb reported the development of an instrument that measures general leisure satisfaction in six different categories: Psychological, Educational, Social, Relaxational, Physiological and Aesthetic. This 'Leisure Satisfaction Scale' (LSS) "... was based on existing theories about leisure behaviour and play and the roles they play in people's lives', (Beard and Ragheb, 1980:30). The theories they utilized during the development of the scale included those put forward by Patrick (1916), Neumeyer et al. (1958), Brightbill (1961), Maslow (1962), Dumazedier (1974) and Neulinger (1975).

They also developed a shorter form of the LSS which contains four items on each subscale and has an alpha reliability of .93. This is the form that was used for this study. Some slight modifications were made in consultation with the authors which made the short form LSS more conducive to collecting data about trail users' specific activities. They felt that "... leisure study depends in part upon the availability of generally accepted measures of the principal traits involved, such as leisure satisfaction" (Beard and Ragheb, 1980:22); and, therefore, developed the instrument in order to learn more about the role of leisure in the satisfaction of individual needs. For Beard and Ragheb, leisure satisfaction is defined as:

> The positive perception or feelings which an individual forms, elicits, or gains as a result of engaging in leisure activities and choices. It is the degree to which one is presently content with his/her general

> leisure experiences and situations. This positive feeling of contentment results from the satisfaction of felt or unfelt needs of the individual.
> (Beard and Ragheb, 1980:22)

Beard and Ragheb's factors were examined in light of Herzberg's theory and five were placed into the 'Motivator' category while factors from the two sections of the questionnaire dealing with other users and physical characteristics of the trails were placed into the 'Hygiene' category along with Beard and Ragheb's Aesthetic Leisure Satisfaction factor. The grouping of these factors into the two Herzberg categories is listed below:

The dissatisfiers or 'Hygiene' factors for the purposes of this study were:

1. People doing activities ... interpersonal relations (Social aspects);
2. 'Management policies' ("Administration" aspects);
3. 'Trail/Facility conditions/Access, etc. ("Physical" aspects);
4. 'Design/Beauty/Interesting/Clean'("Aesthetic" aspects);

The satisfiers or 'Motivator' factors (from beard and Ragheb) were:

1. 'Psychological';
2. 'Educational';
3. 'Social';
4. 'Relaxational';
5. 'Physiological';

Beard and Ragheb's LSS provided these 'motivator' factors which dealt with the intrinsic feelings of the study participants. Their Social factor was used in the psychological sense, relating to satis-

faction with others in their answers to the Leisure Satisfaction Scale whereas the "Social" aspects of the section of the study questionnaire dealing with "other user characteristics" provided the 'hygiene' factors which deal with extrinsic actions and are more related to physical proximity of others and dissatisfaction with others' use of the trails.

The data from this study were factor analyzed and a rotated varimax orthogonal six factor solution was found. Due to the nature of the variable loading, three factors received name changes from the 1980 Beard and Ragheb Leisure Satisfaction Scale. The factors in this study became:

1. 'Enjoyment';
2. 'Knowledge';
3. 'Social';
4. 'Relaxational';
5. 'Well Being';
6. 'Aesthetic.

In order to determine the strength and direction of any relationship between Leisure Satisfaction and reported "satisfaction" with other trail users, 11 different types of use were presented to the respondents. They had the opportunity to express their strength of agreement with the statement: "I am very satisfied with:

people walking/hiking;

people cycling;

people jogging;

people enjoying nature;

people riding horses;

people driving Trail Motorcycles

people driving 4 X 4 vehicles;

people walking unleashed dogs;

people walking leashed dogs;

people orienteering;

people skiing;

Three factors were developed which were then correlated with the six Leisure Satisfaction factors.

The Pearson correlation coefficients for these relationships are shown in Table E.1

Given the low level of correlation coefficients, it is difficult to state that a real relationship exists between factors of the LSS and the characteristics of other users.

A review of the result of the correlation between individual variables of the LSS and the other user characteristics factors revealed no useful levels of correlation coefficients. The large number of respondents (N=657-706) renders the results statistically significant. There is an intriguing directional influence shown in some cases (i.e. "Satisfaction with Vehicles" correlates negatively with the Enjoyment, Social, Relaxational and Aesthetic Leisure Satisfaction factors and "Satisfaction with Animals" showed the strongest correlation, .39, with Relaxational), but they have no real predictive value.

The twelve variables dealing with the physical characteristics of the trails were also subjected to factor analysis, and a rotated

Table E.1

CORRELATION BETWEEN TYPES OF LEISURE SATISFACTION AND FACTORS OF "OTHER USER CHARACTERISTICS"

TYPE OF LEISURE SATISFACTION		OTHER USER CHARACTERISTICS: FACTORS SATISFACTION WITH PEOPLE	SATISFACTION WITH VEHICLES	SATISFACTION WITH ANIMALS
Enjoyment	COEFF	.04	-.06	.07
	N	(723)	(715)	(715)
	P	.269	.091	.051
Knowledge	COEFF	.10	.03	.09
	N	(719)	(704)	(710)
	P	.005**	.462	.016*
Social	COEFF	.09	-.05	.03
	N	(718)	(702)	(708)
	P	.011*	.232	.401
Relaxational	COEFF	.02	-.05	.39
	N	(714)	(698)	(704)
	P	.673	.216	.297
Well-Being	COEFF	.08	.00	-.12
	N	(721)	(705)	(711)
	P	.037*	.952	.001***
Aesthetic	COEFF	.14	-.04	.10
	N	(717)	(701)	(707)
	P	.000***	.236	.007**

* Significant at .05 level
** Significant at .01 level
*** Significant at .001 level

varimax orthogonal three factor solution was found here as well. These factors and their component variables are described in Chapter III. The variables are:

location of the trails;

access to the trails;

change/shower facilities;

maintenance of the trails (upkeep);

access to washrooms;

safety from personal/physical confrontation;

safety of the trails in terms of my expertise level;

trail surface;

locational signs;

directional signs;

length of trails for my use;

trail system overall;

Three factors were developed for these variables after factor analysis, and Pearson Correlation coefficients were developed for the relationships between these factors and the six 1986 LSS factors. These data are displayed in Table E.2.

Significant relationships were found at the .05, .01, and 001 level but, as with the people characteristics, the correlation coefficients were low. The highest found is a negative correlation of.

result of the users' "knowing" that there are insufficient facilities but this is purely speculation. The rest of the correlation coefficients were too low to have predictive value. Significance is believed to be mainly a function of the high response (N-664-713).

Table E.2

CORRELATION BETWEEN TYPES OF LEISURE SATISFACTION AND FACTORS OF "PHYSICAL CHARACTERISTICS" OF THE TRAILS

TYPE OF LEISURE SATISFACTION		PHYSICAL CHARACTERISTICS OF THE TRAILS: FACTORS SATISFACTION WITH CONVENIENCE	SATISFACTION WITH MANAGEMENT	SATISFACTION WITH COMFORT
Enjoyment	COEFF	.01	.09	.06
	N	(724)	(721)	(716)
	P	.744	.015*	.100
Knowledge	COEFF	-.04	.07	-.66
	N	(719)	(716)	(714)
	P	.280	.065	.078
Social	COEFF	.11	.06	.00
	N	(718)	(715)	(713)
	P	.003**	.111	.959
Relaxational	COEFF	.09	.05	.21
	N	(714)	(711)	(712)
	P	.014*	.199	.000***
Well Being	COEFF	.15	.04	.04
	N	(721)	(718)	(709)
	P	.000***	.013*	.346
Aesthetic	COEFF	.26	.24	-.02
	N	(717)	(714)	(719)
	P	.000***	.000***	.674

* Significant at .05 level
** Significant at .01 level
*** Significant at .001 level

There seems to be a little or no relationship between these factors and leisure Satisfaction.

Jacob and Schreyer stated "... conflict must be understood as an individual's interpretation and evaluation of past and future social acts. Social contact, defined as knowledge of another's behaviour, is a necessary condition for conflict", (Jacob & Scheyer 1980:369).

If this definition is accepted, then the absence of someone, or evidence of that someone in the physical environment should not be 'satisfying' to the user. Rather it would be indicative of a lack of need for dissatisfaction. The gaining of satisfaction is an intrinsic process. Satisfaction will logically come from the measure of the activity in which one is engaged. Dissatisfaction is an extrinsic value and one that is imposed by someone or something from outside. the degree to which one is accepting of these dissatisfiers may well rely on the amount of "...compensat[ion] by added inducements" one receives (Pondy, 1967:312)

The low correlation coefficients between the Leisure Satisfaction Scale factors and those of the "Other Users" characteristics and the Physical Characteristics of the trails, indicates support for Herzberg's 'Hygiene-Motivator' theory. Initial assumptions were that it was logical to believe that the perceived characteristics of a particular physical environment would contribute to the satisfaction or dissatisfaction with one's own activity, as it was expressed in this study through the use of a Leisure Satisfaction Scale based upon that of Beard and Ragheb (1980). However, there seems to be little or no relationship between these factors. For Shelly and Adelberg,

"Happiness is a result of the balance between satisfaction and dissatisfaction" (1972:14) which infers that satisfaction and dissatisfaction are on the same continuum. However, in the development of their argument, they introduce the concept of stimulation of the brain's centres of pleasure or pain - punishment as building blocks of satisfaction or dissatisfaction. It may be, as Herzberg proposes, that the stimulators take different forms, such as 'Hygiene', which clear away the dissatisfiers thus returning the individual to a state of being "Not Dissatisfied", and such as 'Motivators', which introduce satisfiers to the individual thus bringing about a state of "Satisfaction" for that individual.

Little or no relationship exists between Leisure Satisfaction and the characteristics of other users of the trails and with the characteristics of the physical environment. Therefore, in answer to the main problem, the amount of different types of leisure satisfaction derived from the use of a particular environment seems to be not dependent upon the characteristics of other users and the characteristics of that physical environment. It must be noted that a limited number of users were questioned and a truly random sample of the general population was not done. This presents room for further study in this area. Group affiliation, specific recreation activity, and the dependent upon the characteristics of other users and the characteristics of that physical environment. It must be noted that a limited number of users were questioned and a truly random sample of the general population was not done. This presents room for further study in this area. Group affiliation, specific recreation activity,

and the use of a specific physical environment can all contribute separately to Leisure Satisfaction. Leisure Satisfaction is gained intrinsically through involvement in a "...particular, freely chosen, leisure activity which is performed for its own sake because [it offers] such intrinsic rewards as feelings of self confidence and competence". (Iso-Ahola, 1978:30).

Comments

Keeping the preceding discussion of Shelly and Adelberg's work in mind, the figures from Herzberg's theory (E.1 - E.4) were modified to reflect a combination of the two approaches, speculating that they could, in fact, be compatible.

In the first instance, introducing motivators or satisfiers could be seen as stimulating the brain's pleasure centre. This would result in an increase in pleasure and an increase in satisfaction which moves the individual to a state of being happy which can be equated to full satisfaction. These thoughts are presented in Figure E.7.

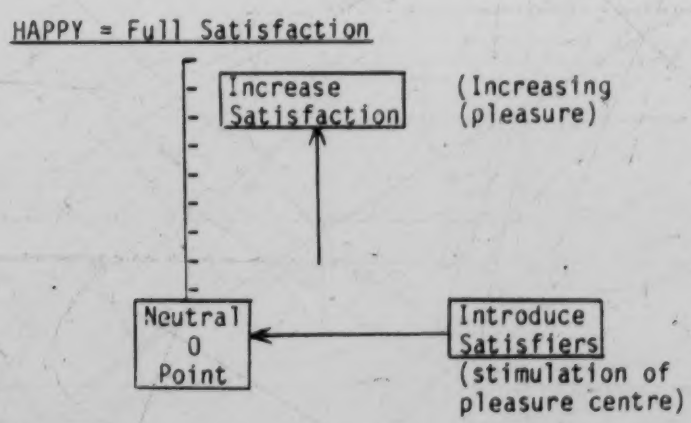

FIGURE E.7

EFFECT OF PLEASURE CENTRE STIMULATION ON SATISFACTION

If the satisfiers are removed, then the individual will experience decreasing satisfaction and decreasing pleasure as he or she returns to the neutral state of being not satisfied. Figure E.8 presents these thoughts.

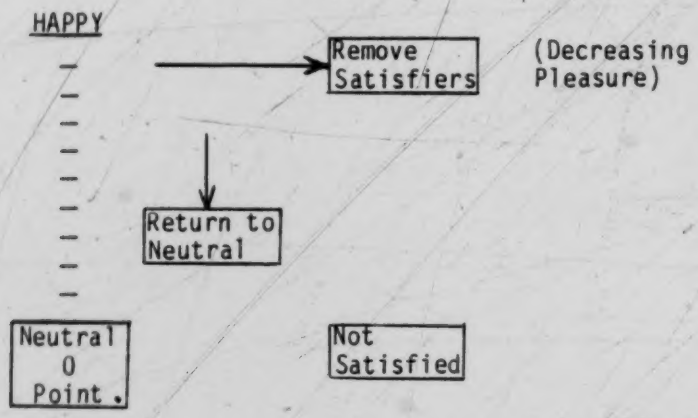

FIGURE E.8

EFFECT ON PLEASURE
OF REMOVAL OF SATISFIERS

If the brain's pain-punishment centre is stimulated through the introduction of displeasure/dissatisfiers, then increasing displeasure and dissatisfaction will move the individual toward a state of being unhappy and, possibly, fully dissatisfied. This is shown in Figure E.9

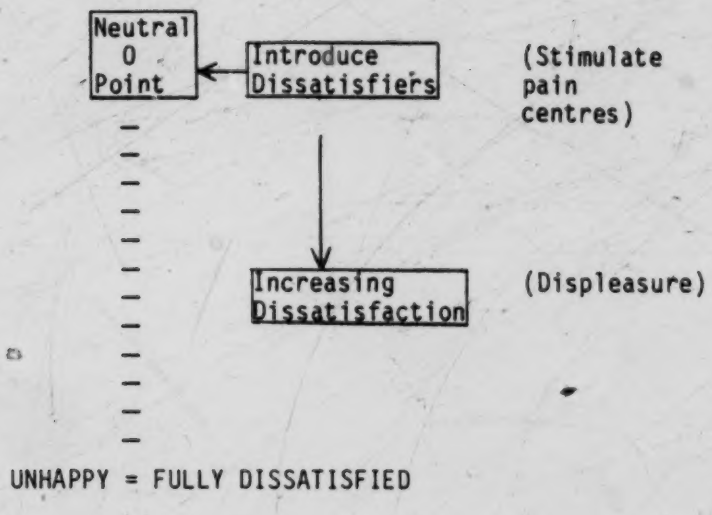

Figure E.9

EFFECT OF PAIN CENTRE
STIMULATION ON DISSATISFACTION

If dissatisfiers are removed (displeasure is removed and pain-punishment centre is not stimulated) then displeasure is decreased, the individual returns toward neutral and a state of being not dissatisfied and not displeased.

Figure E.10 shows this information.

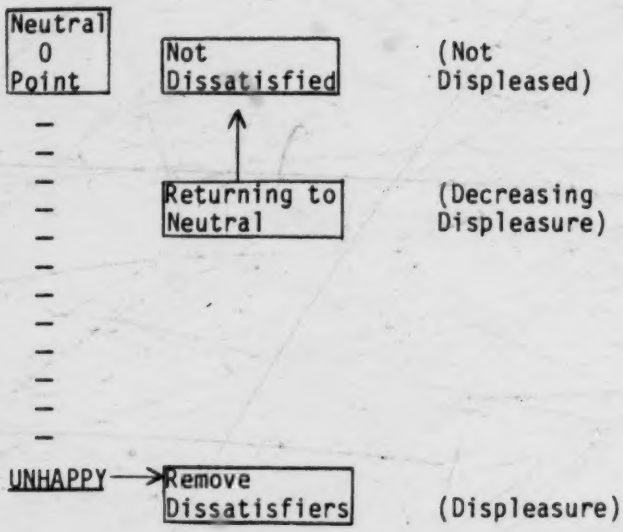

FIGURE E.10

Effect of Removal of
Pain Centre Stimulation
on Dissatisfaction

The preceding interpretation of the data in terms of Herzberg's 'Hygiene - Motivator' theory and Shelly and Adelberg's approach to satisfaction and pleasure offers a different way to understand satisfaction.

Can satisfaction and dissatisfaction be viewed as different from one another or is there a functional relationship between the concepts?

If the concepts are separate, then one of this study's conclusions would be that managers of trail systems should be concerned with removing dissatisfiers, items that bring displeasure to the user, from the situation rather than trying to introduce satisfiers. Since motivators are obtained intrinsically through one's own activity, trying to satisfy users is not useful. Managers should concentrate on

preventing dissatisfiers from occurring in order to ensure reduced potential for conflict and confrontation. This approach is likely to be reflected in reduced numbers of complaints.

This interpretation of the data offers researchers an intriguing direction to follow in future studies of trail system use. Confirmation of the split between satisfaction and dissatisfaction may never be resolved, but it is useful to note that separation of the two concepts can provide a method of focus which allows for a careful scrutiny and further understanding of each.

APPENDIX F

MAP OF EDMONTON'S NORTH SASKATCHEWAN
RIVER VALLEY PARKS SYSTEM

MAP REMOVED DUE TO POOR PRINT QUALITY